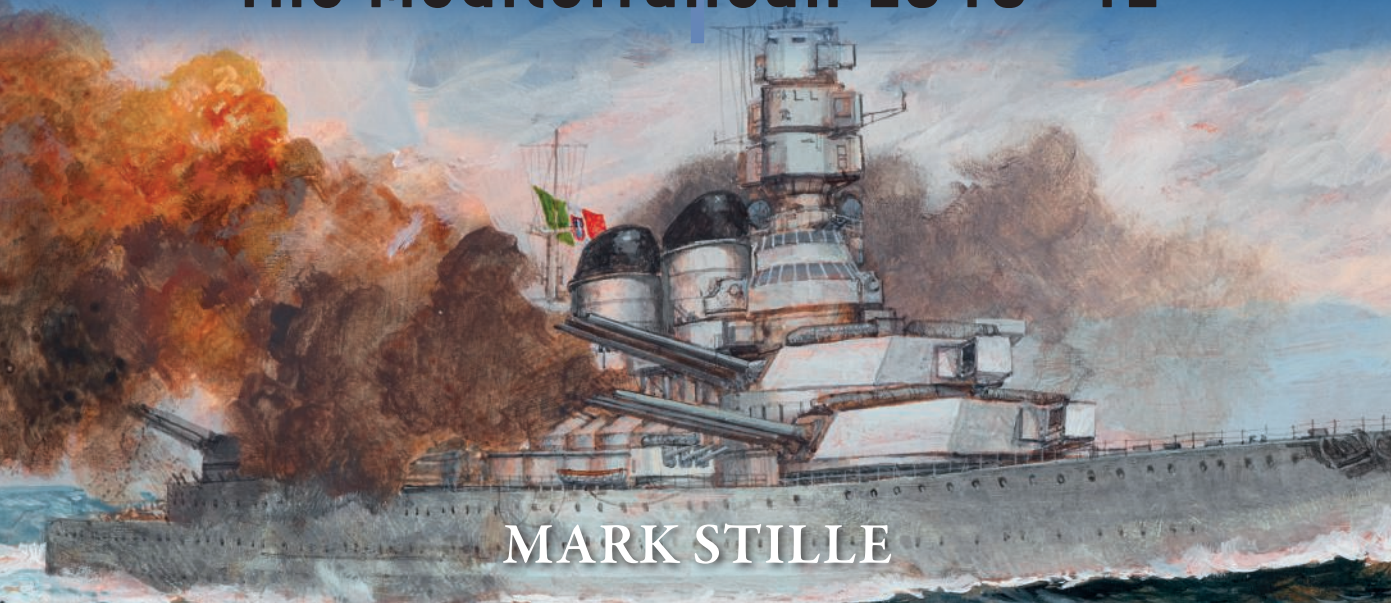
BRITISH BATTLESHIP VS ITALIAN BATTLESHIP

The Mediterranean 1940–41



MARK STILLE

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INTRODUCTION

The battle for control of the Mediterranean Sea was the longest campaign involving naval, air and ground forces of World War II. At various stages, it involved the navies of the United Kingdom, the United States, France, Italy and Germany. Although World War II had been under way since 1 September 1939, hostilities in the Mediterranean did not begin until Italy entered the war on 10 June 1940. Just 12 days later, France signed an armistice with Germany and dropped out of the Allied powers facing Germany and Italy. This left the United Kingdom to carry the fight alone against the Axis in the Mediterranean. Initially, Italy fought largely alone in the Mediterranean but as its fortunes waned, Germany was forced to play a greater role. Italy's Regia Marina (Royal Navy) was the predominant Axis naval force in the Mediterranean until Italy signed an armistice with the Allied powers on 3 September 1943 (made public five days later) and duly defected from the Axis. Despite myth, the Regia Marina fought hard during the naval war in the Mediterranean and on several occasions more than held its own against the British Royal Navy.

The United Kingdom decided to contest control of the Mediterranean for several reasons. The primary driver was the important sea lines of communications (SLOCs) which ran through the Mediterranean Sea from the United Kingdom to its colonial possessions in India and the Far East. If the sea lanes through the Mediterranean were closed, the British would be forced to use the Cape of Good Hope route around Africa, a total distance of 12,000 miles. This route quadrupled shipping requirements compared to the Mediterranean route and had strategic implications for Allied capabilities and plans worldwide. In reality, though, the Mediterranean was the only place where British forces could fight against the Axis with any hope of success. The Royal Navy entered the war as the strongest navy in Europe and considered the Regia Marina to be a weak opponent which would be quickly crushed. Once the Regia

Dating from the mid-1930s, this photograph shows the Queen Elizabeth-class battleship *Barham* after its 1931–34 modernization. (NH 63077 courtesy of the Naval History and Heritage Command)

Marina was defeated, the British would have the option of seizing Italy's Libya colony or attacking anywhere along Europe's southern periphery.

British hopes of quickly defeating the Regia Marina and seizing Libya were frustrated by the stubborn resistance of the Italians and the intervention of the Germans who contributed ground forces which restored the Axis position in Libya and air forces which helped the Axis to strengthen its hold upon the Central Mediterranean. Control of this area allowed the Axis to supply its forces in Libya and closed off the Mediterranean to British shipping. It also made it increasingly difficult for the British to supply the island of Malta. Even during the early stages of the naval war in the Mediterranean, both sides focused on convoy operations in the Central Mediterranean which served as a trigger for several large naval encounters.

This view of *Conte di Cavour* at Taranto in 1938 after the completion of its rebuilding shows the port-side 4.7in secondary battery twin turrets and the forward 3.9in twin turret for anti-aircraft protection. The device on top of the superstructure is the main-battery rangefinder. (M. Brescia Collection)

On 10 June 1940, when Italy entered World War II, the naval balance favoured the Allies. Following the withdrawal of France from the war, however, the naval balance between the Royal Navy and the Regia Marina was more even, with the former holding the edge in large ships and the latter in all other categories.

The naval balance in the Mediterranean, June 1940					
Ship type	**Royal Navy**	**Regia Marina**	**Ship type**	**Royal Navy**	**Regia Marina**
Carrier	2	0	Light cruiser	7	14
Battleship	4	2	Destroyer	31	59
Battlecruiser	1	0	Submarine	12	113
Heavy cruiser	0	7			

The Regia Marina was not ready for the naval war in the Mediterranean; it only had two battleships in service, though it expected to have another two modernized and two new battleships enter service within a matter of months. Until they did so, however, the Royal Navy had an edge in large ships. On top of this, the Royal Navy operated aircraft carriers while the Regia Marina had none. The immediate availability of naval air power operating from the decks of aircraft carriers serving with the British battle fleet was to prove a key factor in the battles to come. The Regia Marina possessed a considerable edge in cruisers, destroyers and submarines, but this could prove irrelevant in a fleet action.

Both navies adhered to the traditional concepts of sea control which placed the battle fleet and its most powerful component, the battleship, at the centre of operations. Sea control could only be gained and maintained by a balanced battle fleet which was composed of several important components. Cruisers were used by both

Warspite in Malta's Grand Harbour in autumn 1938 after completion of the battleship's 1934–37 reconstruction. Note the massive bridge structure and the aviation facilities amidships with a double-ended aircraft catapult and space for two floatplanes. The rebuilt *Warspite* was a major player in the early naval war in the Mediterranean.
(M. Brescia Collection)

Littorio was launched in Genoa on 22 August 1937, making Italy the first nation to launch a 35,000-ton battleship in the 1930s in accordance with the terms of the Washington Naval Treaty of 1922. Italian designers achieved a balanced design, largely because *Littorio* displaced over 41,000 tons. (M. Brescia Collection)

sides for scouting, and the Regia Marina used its heavy cruisers in the battle line to make up for its lack of battleships. Destroyers were necessary for screening and to conduct torpedo attacks on the enemy battle line. The Royal Navy used aircraft carriers to extend its striking range to cripple enemy ships so that they could be brought within range of the battle fleet. Nevertheless, the centrepiece of the battle fleet was the battleship. Only the battleship had the combination of striking power and protection required to defeat another battleship. The 'big guns' of the battleship were the final arbiter of victory at sea.

While both sides accepted the primacy of the battleship, they did not plan to employ their battleships in the same manner. The Royal Navy sought a quick decision at sea and was aggressive in its employment of the battle fleet. The Regia Marina did not shirk from a clash of battle fleets but sought to accept battle only under advantageous conditions. Because it could not replace its losses, and because control of the Central Mediterranean was underpinned by a fleet of battleships, the Regia Marina had to maintain a fleet-in-being and was therefore much more cautious in the tactical employment of its battle fleet.

The British and Italian battle fleets first clashed soon after Italy entered the war. The resulting engagement – the battle of Calabria on 9 July 1940 – was one of the largest naval battles of the entire war, but because it proved brief and indecisive it is virtually unknown today. Subsequent opportunities for British and Italian battleships to engage each other again were rare, though both battle fleets were active and often came within close proximity of each other. Despite the few instances of direct engagement, the battleships of the two navies played a key role in every major naval engagement in the Mediterranean during 1940 and 1941.

CHRONOLOGY

1914

May *Giulio Cesare* is completed.

December *Queen Elizabeth*, lead battleship of five, is completed.

1915

April *Conte di Cavour*, lead battleship of three, is completed.

April *Warspite* is completed.

May *Caio Duilio*, lead battleship of two, is completed.

September *Barham* is completed.

1916

February *Malaya* and *Valiant* are completed.

March *Andrea Doria* is completed.

May *Royal Sovereign*, lead battleship of five, is completed, along with *Revenge* and *Royal Oak*.

December *Resolution* is completed.

1917

October *Ramillies* is completed.

1927

August *Nelson*, lead battleship of two, is completed.

December *Rodney* is completed.

1937

June *Conte di Cavour* and *Warspite* are both recommissioned after modernization.

October *Giulio Cesare* is recommissioned after rebuilding.

1939

November *Valiant* completes modernization.

1940

May *Vittorio Veneto* and *Littorio* are completed.

10 June Italy enters World War II.

3 July The British Force H attacks the French fleet at Mers-el-Kébir.

9 July Three British battleships face two Italian battleships at the battle of Calabria; *Giulio Cesare* is damaged and the Italian battle fleet breaks off the action.

15 July *Caio Duilio* is recommissioned after rebuilding.

6 September The British reinforce the Mediterranean Fleet with the battleship *Valiant* and the aircraft carrier *Formidable*. The Italian battle fleet attempts to intercept with five battleships, but fails to make contact.

26 October *Andrea Doria* is recommissioned after rebuilding.

11–12 November British carrier aircraft attack the Italian battle fleet at Taranto. *Conte di Cavour* is heavily damaged and never returns to service; *Littorio* and *Andrea Doria* are damaged, but return to service.

27 November The Italian battle fleet sorties to engage Force H off south-western Sardinia. The British battleship *Ramillies* and battlecruiser *Renown* fight an indecisive action with *Vittorio Veneto* and *Giulio Cesare* at the battle of Cape Spartivento.

December *King George V*, lead battleship of five, is completed.

1941

31 January *Queen Elizabeth* completes extensive modernization.

9 February Force H, with one battleship, one battlecruiser and one aircraft carrier, bombards Genoa; led by three battleships, the Italian battle fleet puts to sea but fails to intercept.

26–29 March At the battle of Cape Matapan the Italian battle fleet, led by *Vittorio Veneto*, attempts to attack British convoys in the Eastern Mediterranean. After an indecisive gunnery action south of Crete, British carrier aircraft damage *Vittorio Veneto*. The battleship escapes, but three Italian heavy cruisers and two destroyers are sunk.

22–26 August Force H lays mines off Livorno; led by *Vittorio Veneto* and *Littorio*, the Italian battle fleet puts to sea but fails to intercept.

1 October A British operation to send a large convoy to Malta from Gibraltar, escorted by three battleships and an aircraft carrier, ends; an Italian battle fleet led by *Vittorio Veneto* and *Littorio* puts to sea, but fails to intercept.

25 November The British battleship *Barham* is sunk by *U-331*.

18 December At the first battle of Sirte, the Italian battle fleet with *Littorio*, *Giulio Cesare* and *Andrea Doria* fights an inconclusive engagement with a British cruiser–destroyer force to cover an Axis convoy headed to Libya.

19 December Italian manned torpedo craft heavily damage *Queen Elizabeth* and *Valiant* in Alexandria harbour.

1942

22 March In the second battle of Sirte, the Italian battle fleet, led by *Littorio*, attacks the escort of a British convoy headed for Malta. A long-range gunnery duel delays the convoy long enough so that all four merchant ships are sunk by air attack.

June *Roma* is completed.

12–16 June The British mount a major relief for Malta with convoys from Gibraltar and Alexandria. The Italian battle fleet moves against the eastern convoy with *Vittorio Veneto* and *Littorio*; the convoy is forced to retreat to Alexandria.

10–15 August In Operation *Pedestal*, part of a major British convoy gets through to Malta; the Italian battle fleet is unable to intervene because of a lack of fuel oil.

8 November In Operation *Torch*, Allied forces land in Vichy North Africa.

1943

May Axis forces in Tunisia surrender.

July In Operation *Husky*, Allied forces land on Sicily.

8 September An armistice between Italy and the Allied powers is announced.

10–11 September Much of the Italian battle fleet arrives at Malta to be interned.

Rebuilding of *Andrea Doria* began at Trieste in late 1937 (as shown in this view) and lasted until October 1940. The result was a battleship of limited capabilities which was outmatched by British battleships operating in the Mediterranean. (M. Brescia Collection)

DESIGN AND DEVELOPMENT

THE ROYAL NAVY'S BATTLESHIP FORCE

The Royal Navy entered World War II with a battleship force almost entirely built during World War I. All of the ships had been modernized between the wars, some extensively so, but the Royal Navy's battle fleet went into the naval war in the Mediterranean with definite operational limitations. The nature of the Royal Navy's battleship force was further shaped by the terms of the Washington Naval Treaty of 1922 which limited the size of the force and prevented new construction except for the two Nelson-class battleships, *Nelson* and *Rodney*, both of which were completed in 1927. The British were slow to re-arm as the threat of Nazi Germany emerged, however, and it was not until 1937 that the five battleships of the new King George V class were laid down. The lead ship of the class, *King George V*, was not completed until December 1940.

The Royal Navy's battleship force was stretched thin by 10 June 1940 when Italy entered the war. The primary threat to the United Kingdom and its SLOCs was the Kriegsmarine (German Navy). The Germans used their small battle fleet to lead the invasion of Norway in April 1940 and to raid British SLOCs in the North Atlantic. This required the Royal Navy to keep its most modern battleships in the North Atlantic. It also forced the Royal Navy to devote some of its least capable and slowest battleships to protect convoys. The stresses of fighting the Germans increased when the battleship *Bismarck* was completed in August 1940. *Tirpitz*, the second of the

This photograph shows *Warspite* in its original configuration from 1917. The five Queen Elizabeth-class battleships were the most powerful in the world at the time with a fine balance of protection, firepower and speed. The year before, on 31 May, *Warspite* had taken 15 hits from large-calibre German shells at the battle of Jutland but was able to keep fighting. (M. Brescia Collection)

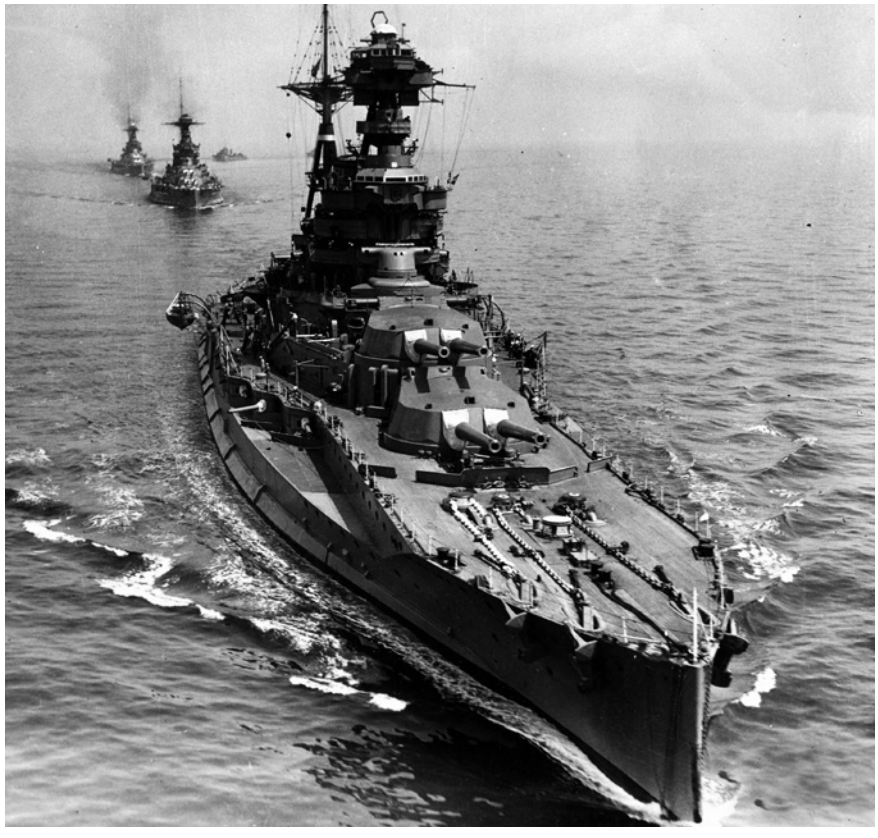
Bismarck-class battleships, joined the Kriegsmarine fleet in February 1942; both battleships were more powerful than any single British battleship. As a matter of course, the British considered it necessary to use two of their most modern battleships to counter a single Bismarck-class battleship.

In late 1941 the Japanese looked increasingly likely to enter World War II. The British did not plan to send a battle fleet to the Far East until months after the outbreak of war, but this was quickly changed when Churchill decided to send a small force with the battlecruiser *Repulse* and the battleship *Prince of Wales* to the Far East as a deterrent against Japanese expansion, followed by a larger battle fleet comprised primarily of Royal Sovereign-class battleships. This obviously left fewer resources available to the Royal Navy to counter the Axis forces in the Mediterranean.

Before Italy entered the war in June 1940, the Royal Navy's Mediterranean Fleet was brought up to strength. The backbone was formed by the five Queen Elizabeth-class battleships, considered more powerful than the four oldest Italian battleships. Royal Sovereign-class battleships were also used in the Mediterranean when the British thought more battleships were necessary to keep an edge on the Italian battle fleet, but for the most part the slow speed of these ships confined them to Atlantic convoy escort duties or other special missions. The two Nelson-class battleships were mostly kept in home waters, as were the just-commissioning King George V-class battleships.

THE QUEEN ELIZABETH CLASS

The Queen Elizabeth class – *Queen Elizabeth*, *Warspite*, *Valiant*, *Barham* and *Malaya* – was conceived during the dreadnought-building race in the years preceding World War I. The first modern British battleship, *Dreadnought*, and the next several classes of British battleships carried 12in guns. The British then went to a 13.5in main battery with the Orion class in the 1909 Naval Programme. In the 1912 Naval Programme, Winston Churchill, as First Lord of the Admiralty, pushed for the adoption of a 15in main battery as a hedge against a similar move by other naval powers. In addition to



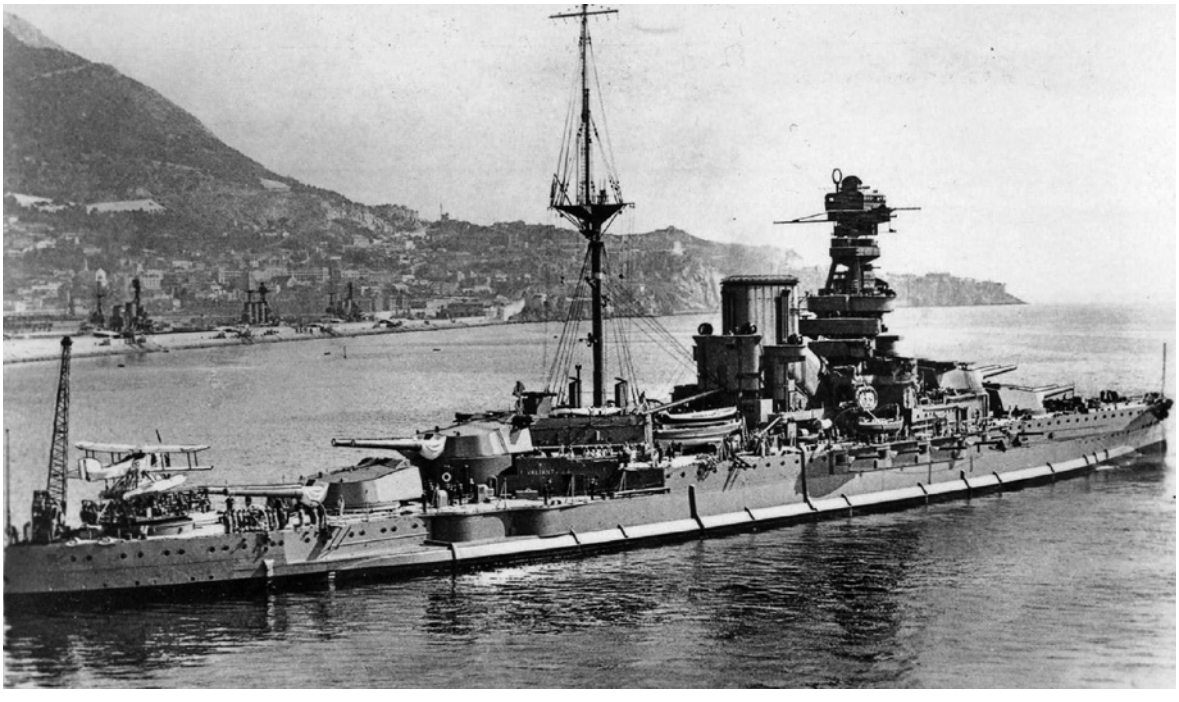
Barham pictured in 1937 with other battleships of the Home Fleet. *Barham* was the least modernized of the five Queen Elizabeth-class battleships, but saw heavy service in the Mediterranean before being lost on 25 November 1941 to torpedoes launched by *U-331*. (M. Brescia Collection)

the increase in firepower, the British decided to incorporate a major increase in propulsive power. To achieve the design speed of 25kn, 24 boilers were needed.

The main battery was composed of the new 15in/42 Mk I gun, all eight of which were placed on the centreline in four twin turrets. The secondary battery, which was intended for defence against torpedo boats, was composed of 16 6in Mk XII single guns mounted in casemates, but it was quickly determined that the after four guns were worthless in heavy seas. Two of the four guns were removed and the other two were moved to better positions.

Armour on the Queen Elizabeth class totalled 29 per cent of the design displacement. With this, designers were able to provide a 13in waterline armour belt with 6in armoured bulkheads to enclose the area within the main belt. Barbette armour was a maximum of 10in thick. Horizontal protection was distributed over four different decks and totalled as much as 7in in some areas. Underwater protection was weak, however, as was common for all warships of the period, with only a 2in torpedo bulkhead.

The Queen Elizabeth-class battleships went to a full oil-fired system, the first battleships to do so. Four turbines drove the four shafts to achieve the desired 75,000shp. On trials, the 25kn design speed was not achieved, but the 24kn that was recorded made them some of the fastest battleships of the era. In addition to unmatched firepower and speed, these battleships possessed considerable protection; and their combination of firepower, speed and protection made them well-balanced



Valiant shown off Gibraltar in 1935–36 after completion of its first modernization. The battleship received a new fire-control system and aviation facilities on the quarterdeck, and had its two stacks trunked into one. (M. Brescia Collection)

ships. In fact, they were the first 'fast battleships' ever designed which became the norm for designers of post-Washington Naval Treaty battleships built in the years immediately preceding World War II.

Because the Washington Naval Treaty prohibited new battleship construction, the Royal Navy was forced to modernize its existing battleships. In the case of the Queen Elizabeth class this reconstruction was significant. Details are provided later in this book.

THE ROYAL SOVEREIGN CLASS

The battleships of the 1913 Naval Programme became the Royal Sovereign class, four of which – *Revenge*, *Royal Sovereign*, *Royal Oak* and *Resolution* – were completed between February and December 1916 and the fifth, *Ramillies*, in September 1917. The five ships possessed broadly similar capabilities to those of the preceding Queen Elizabeth class with the salient exception of reduced speed. For this reason, they were viewed as a step backwards from the very successful Queen Elizabeth class; and because they received very limited modernizations between the wars and saw their service speed drop below the original 23kn, by the beginning of World War II they were second-line units.

In terms of firepower, the Royal Sovereigns class was virtually unchanged from the Queen Elizabeth class with a main battery of eight 15in/42 Mk I guns and a slightly smaller secondary battery of 14 6in Mk XII guns in casemates.

Protection was on the same scale as that of the Queen Elizabeth class. The total weight of armour was 31.7 per cent of design displacement. The main belt was a maximum of 13in thick which covered the area between the forward and aft 15in twin turrets. At the end of the belt were 6in transverse armoured bulkheads.

Ramillies, final ship of the Royal Sovereign class, shown here on trials in 1917. Despite their heavy armament, the Royal Sovereign-class battleships were always seen as a step backwards from the very successful preceding Queen Elizabeth class because of their lower maximum speed. (Library of Congress)

Horizontal protection again featured the inefficient distribution of armour over four decks, but was significant over key areas.

Underwater protection remained a weakness. *Ramillies* was completed with shallow anti-torpedo bulges and *Revenge* and *Resolution* were fitted with the same before the end of World War I. *Royal Sovereign* received its anti-torpedo bulges in a refit begun in 1920 and *Royal Oak* was fitted with anti-torpedo bulges during its 1922–24 refit. All five ships had their vital areas covered by an anti-torpedo bulkhead 1–1.5in thick. This underwater protection proved inadequate during World War II, however.

Speed was not a priority design consideration and the original design speed was only 21kn. After the success of the oil-fired Queen Elizabeth class, it was planned that the Royal Sovereign class would revert to mixed oil and coal firing as a hedge against the possibility that World War I would disrupt oil supplies. In late 1914, the design was changed to oil-firing only and maximum speed was raised to 23kn. Eighteen boilers drove the four turbines and generated a total of 40,000shp.

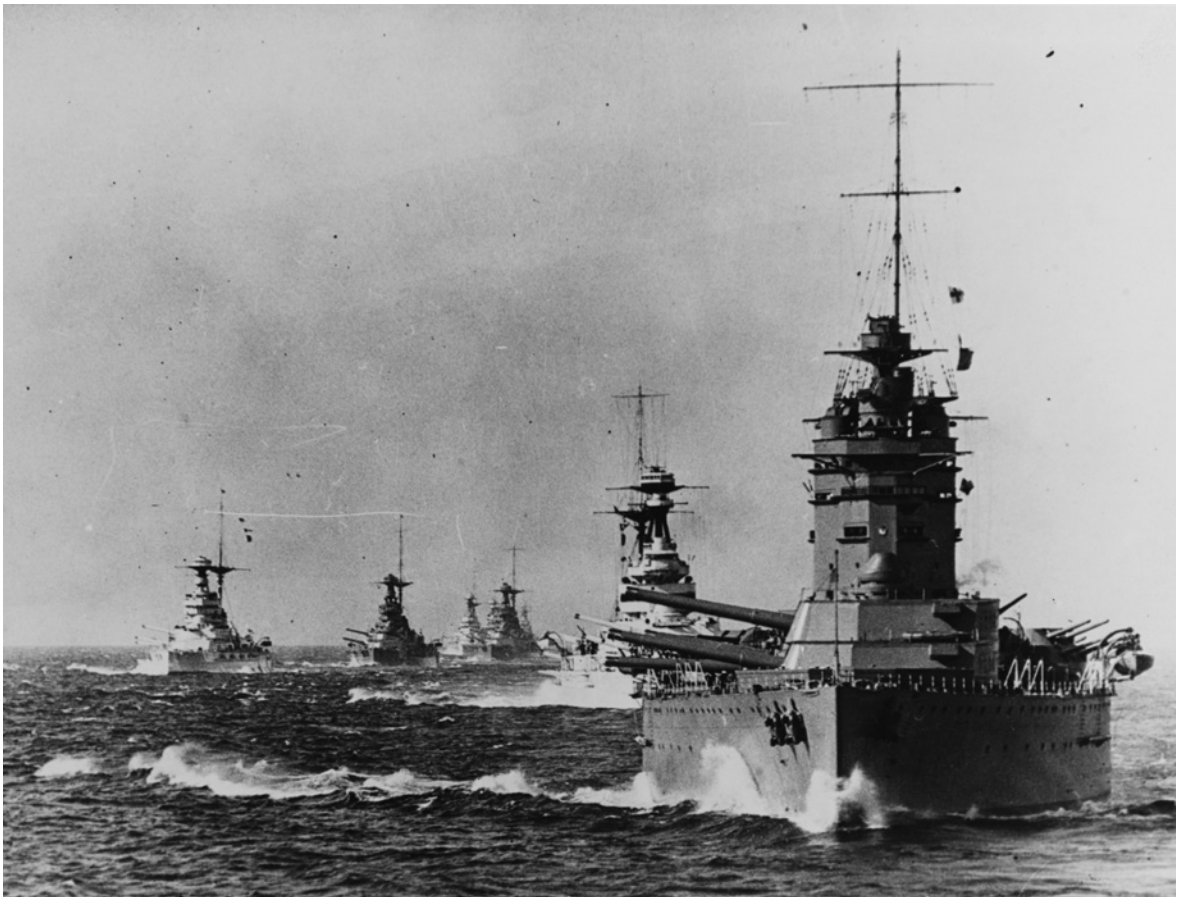
THE NELSON CLASS

As mentioned earlier, the two battleships of the Nelson class – *Nelson* and *Rodney* – were kept in home waters during the early part of World War II to counter the threat of the Kriegsmarine. They did not see service in the Mediterranean until July 1941 when *Nelson* was assigned to escort a convoy to Malta. In September that year, both battleships formed part of the escort for a large Malta convoy during which *Nelson* was hit by a single torpedo dropped from a Regia Aeronautica (Italian Air Force) torpedo bomber. The torpedo hit forward of the forward-most 16in triple turret and caused severe flooding which required repairs at Malta. Neither ship had the opportunity to engage its Italian counterparts despite extensive Mediterranean service in 1942 and 1943.

The origin of the design for the Nelson class came from the requirement to match the Japanese and American navies which already had battleships armed with 16in guns in service following World War I. Because of the existing Japanese and American battleships, the Washington Naval Treaty permitted the British to build two similar

Royal Sovereign in 1938–39 steaming in column with other battleships and cruisers of the Home Fleet. By the start of World War II, the Royal Sovereign-class battleships were obsolescent and were assigned secondary duties for most of the conflict. (M. Brescia Collection)

battleships. The design had to conform to the treaty's 35,000-ton limit for battleships, so there was an inevitable compromise in the struggle to fit a heavy armament, heavy protection and high speed into a single hull. The result was a truncated-looking design which uniquely placed all three main-battery triple turrets forward of the superstructure to reduce weight by decreasing the length of the hull which required armour. The designers succeeded in building a battleship with an unparalleled armament of nine 16in/45 Mk I guns, a high standard of protection and an acceptable top speed of 23kn.



A Nelson-class battleship leads a major portion of the Royal Navy's capital ships in manoeuvres between the wars. In a navy wedded to the big gun, the two Nelson-class battleships were important assets because they carried the fleet's only 16in guns. (NH 50918 courtesy of the Naval History and Heritage Command)

The main battery was built around the new 16in/45 Mk I gun which fired a 2,048lb shell at very high velocity, resulting in increased barrel wear and decreased accuracy. The triple turret itself had a series of problems that were never solved. Twelve 6in Mk XII guns comprised the secondary battery, all mounted in twin mounts and placed aft.

Protective armour represented 29.3 per cent of the standard displacement. The main belt was a maximum of 14in deep over the magazines and 13in elsewhere. Barbette armour was a maximum of 15in thick with the armour of the 16in turret face being 16in thick. Horizontal protection featured a main armoured deck with a maximum of 6.25in over the magazines, 4.25in over the steering gear and 3.75in over the machinery spaces. *Nelson* received additional horizontal armour during a 1937 refit. Underwater protection was designed to defeat the effect of a 750lb mine or torpedo warhead through a combination of a 1.5in anti-torpedo bulkhead, an internal anti-torpedo bulge between the belt and the outer hull, and a water-filled buoyancy chamber.

Because of the specified weight limitations, machinery was limited to that necessary to develop 46,000shp, which was sufficient for 23.5kn. Although this speed may have been good enough to keep up with Royal Navy's other battleships, it was inferior to that of almost all other foreign battleships.

THE KING GEORGE V CLASS

The final class of British battleships to see service in the Mediterranean during the war was the five-ship King George V class; but only one of the ships, *Prince of Wales*, saw action in the Mediterranean while escorting a convoy to Malta during September 1941. Because they were the Royal Navy's most modern battleships, they were usually held in home waters to maintain the desired 2:1 advantage over *Bismarck* and *Tirpitz*.

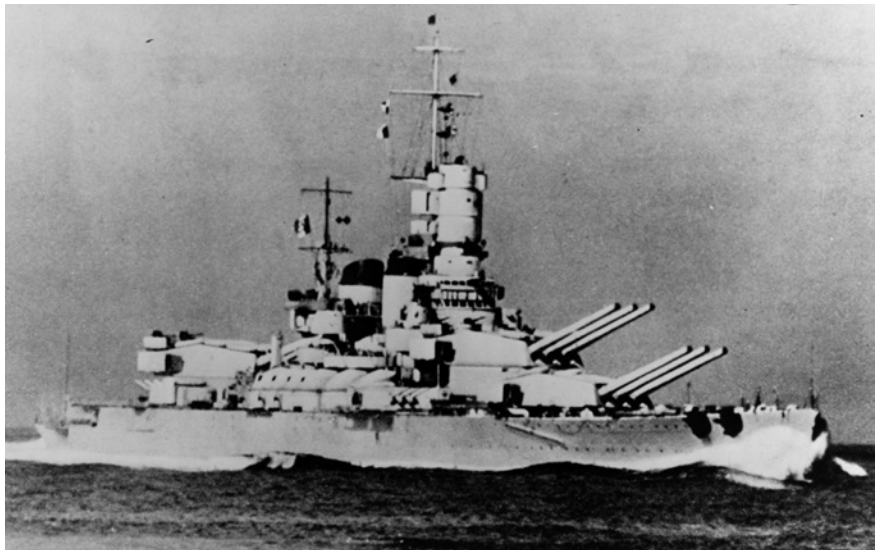
The lead ship of the class was laid down in January 1937, while treaty limitations were technically still in force, so the design was still based on the 35,000-ton limit and a self-imposed limit of a 14in main battery. The British decided not to take advantage of escalator clauses which permitted battleships of up to 45,000 tons fitted with 16in guns so as not to delay the completion of the new ships. Despite these limitations, the ships which entered service possessed a good balance of firepower, protection and speed.

The main battery consisted of ten 14in Mk VII guns in two quadruple turrets and a single twin turret. The guns were smaller than those on other navies' battleships of the period but proved successful in service. However, the complex loading equipment in the quadruple turrets caused problems throughout World War II. The secondary battery dispensed with the antiquated concept of separate secondary and anti-aircraft batteries by fitting 16 5.25in Mk I dual-purpose guns in eight twin turrets.

The protection scheme was designed to protect the vitals of the ship from 15in shells. This was judged sufficient because the largest German and Italian battleships mounted 15in guns. The main belt consisted of 15in of armour and was enclosed with transverse armoured bulkheads of 10–12in. Horizontal protection was a maximum of 6in over the magazine and 5in over the machinery spaces. Torpedo protection depended on an internal anti-torpedo bulge featuring three layers of plating which created two vacant spaces and a central space filled with water.

Each King George V-class battleship was fitted with eight boilers with superheaters that could produce 100,000shp on four shafts – enough to produce a top speed of 28kn. This was a dramatic improvement for a British battleship but still inferior to the top speeds of the latest German and Italian battleships.

This is a view of *Prince of Wales* after completion in early 1941. Note the large bridge structure, similar to that fitted on the modernized Queen Elizabeth-class battleships, the twin stacks and the aviation facilities between and the 14in quadruple turret forward. (80-G-190724 courtesy of the Naval History and Heritage Command)



Littorio on gunnery exercises during the summer of 1940. (NH 86133 courtesy of the Naval History and Heritage Command)

THE REGIA MARINA'S BATTLESHIP FORCE

After World War I, Italy experienced severe economic difficulties, which meant that it was unable to build up to the 175,000 tons of battleships allocated to it by the Washington Naval Treaty. For most of the 1920s, the Regia Marina's battleship force consisted of the unique *Dante Alighieri*, the two surviving ships of the Conte di Cavour class and two Caio Duilio-class ships. No new battleship construction was undertaken due to the poor economic conditions and the fact that the Regia Marina's rival, France's Marine nationale, also made no effort to build up to France's allowed 175,000 tons allocation. With its limited naval budget during the 1920s, Italy decided to build 10,000-ton cruisers and use them as surrogate capital ships. In 1928, *Dante Alighieri* was scrapped, and the two Conte di Cavour-class ships were placed in reserve.

France laid down the first of two 26,500-ton Dunkerque-class battleships armed with eight 13in guns in 1932. Germany responded with two ships of the Scharnhorst class. Italy was forced to respond because France was seen as the most likely naval

Conte di Cavour pictured in early 1916 after commissioning. This is the ship in its original configuration with three triple and two twin turrets fitted with 13 12in/46 guns. Note the minimal bridgework and the presence of 4.7in/50 guns in casemates. (M. Brescia Collection)

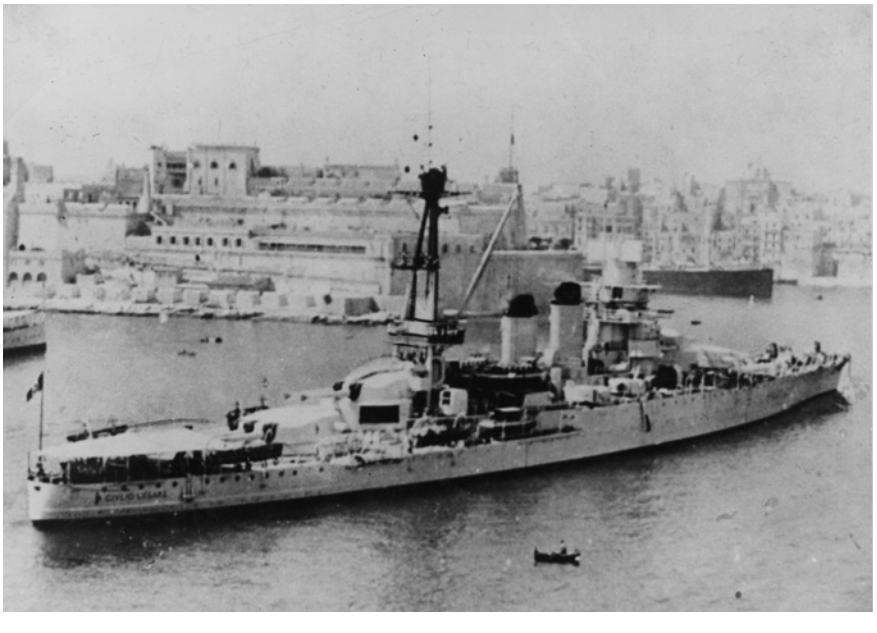
adversary, and began design work on what became the Vittorio Veneto class. This new class was much larger than the treaty displacement of 35,000 tons; in fact, the new ships came in at over 40,000 tons, but this was of no concern to the Italian government. As a stop-gap measure until the new battleships could be completed, modernization of the four older Italian battleships commenced.

THE CONTE DI CAVOUR CLASS

The three-ship Conte di Cavour class – *Conte di Cavour*, *Giulio Cesare* and *Leonardo da Vinci* – was designed in 1908 but not completed until April 1915. By then they were already inferior to battleships already in service with the other naval powers of the day (except the French) because the three Italian ships were lacking in protection, firepower and, to a lesser extent, speed. The design of the Conte di Cavour class confirmed the Italian preference for speed over protection and a continued acceptance of a smaller main battery because Italian industry was incapable of building guns larger than 12in diameter.

When completed, the Conte di Cavour class ships mounted a main battery of 13 British-designed but Italian-built 12in/46 guns fitted in a unique combination of three triple turrets and two twin turrets. This was an inferior arrangement, however, because one of the triple turrets was placed amidships which gave it limited firing arcs on both beams. The secondary battery was composed of 18 single 4.7in/50 guns, also designed in the United Kingdom but built in Italy, all mounted in casemates.

Protection of the Conte di Cavour-class ships was a definite improvement over that of the preceding *Dante Alighieri*, but was greatly inferior to that of British, German, American and Japanese ships of the same period. The main belt was 10in thick and covered the area between the main-gun turrets. Horizontal armour was composed of a main deck of 1in, sloping to 1.5in on the deck edges, and a middle deck with just over another 1in of armour. The turret barbettes and conning tower were covered by



Giulio Cesare conducted a port visit to the Mediterranean Fleet's main base at Malta in June 1938. Despite an extensive rebuild in 1933–37, *Giulio Cesare* was no match against the British battleships of the period. (NH 86591 courtesy of the Naval History and Heritage Command)

11in of armour. There was no dedicated underwater protection when the three ships of the class were completed.

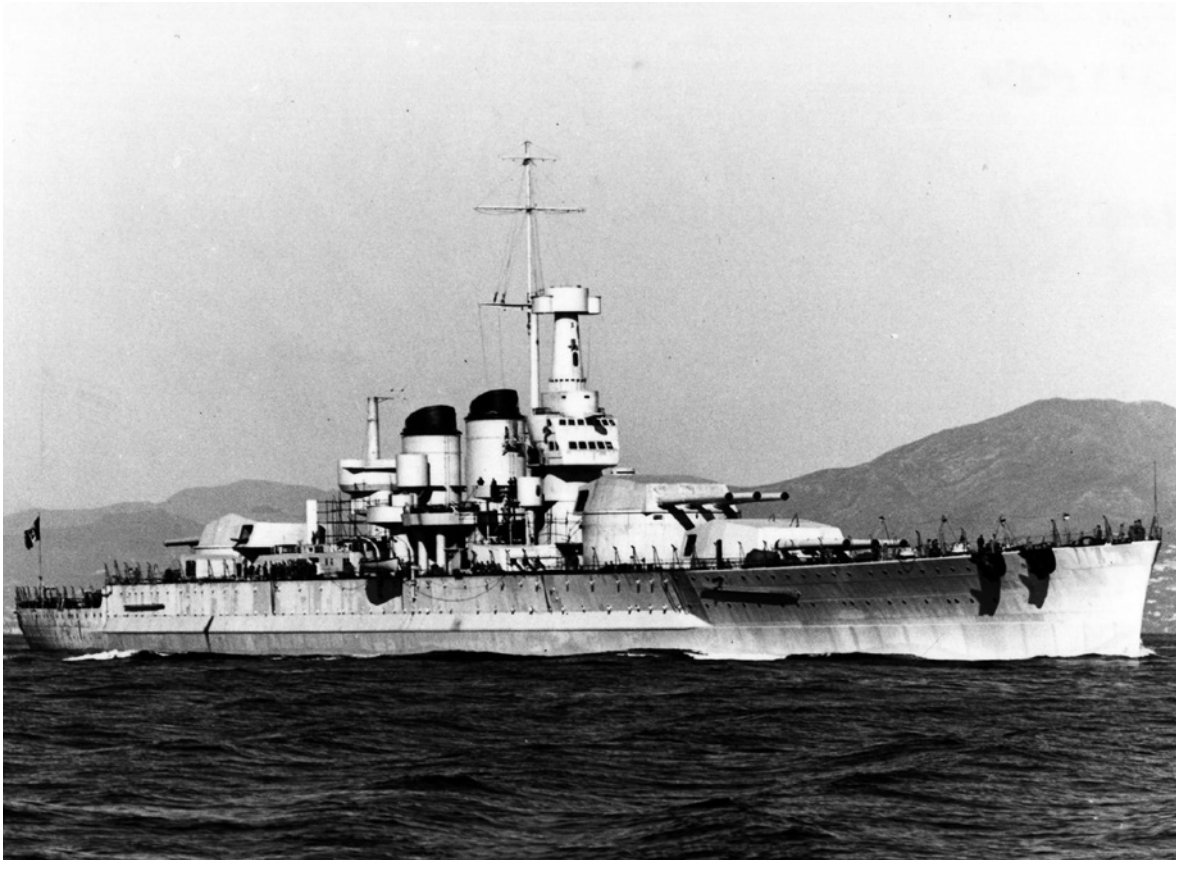
The propulsion system of mixed-firing boilers and three sets of turbines produced only 31,000shp, sufficient to drive the ships at a top speed of 21.5kn.

As mentioned above, the two surviving ships of the class (*Leonardo da Vinci* was sunk by a magazine explosion on 2 August 1916, salvaged in 1919 and scrapped in 1923) were modernized before World War II. Details are provided later in this book.

THE CAIO DUILIO CLASS

The two ships of the Caio Duilio class, *Caio Duilio* and *Andrea Doria*, were laid down in early 1912 and completed in 1915 and 1916 respectively. In almost all respects, they were repeats of the proceeding Conte di Cavour class. The main battery was identical, but the secondary battery was improved with the fitting of 16 6in/45 guns, again all in casemates. Protection differed only slightly; the main armour belt was still 10in thick and the heaviest protection of 11in was placed on the turret barbettes, the turret faces and the conning tower. Propulsion again employed a combination of coal and oil-fired boilers which developed 32,000shp and a top speed of 21.5kn. The two Caio Duilio-class ships also received extensive modernization before the start of World War II, details of which are outlined later in this book.

This is a Caio Duilio-class battleship during World War I. The appearance of the two ships of this class was almost identical to that of the preceding Conte di Cavour class. Both ships possessed a heavy broadside, as evident in this view, but the main guns were only 12in in diameter meaning they were outgunned by all other modern battleships of the day. (M. Brescia Collection)



This is *Littorio* running trials in December 1939. Much equipment has yet to be fitted and the bow was later modified to address a severe vibration problem. (M. Brescia Collection)

THE VITTORIO VENETO CLASS

The design genesis of what became the Regia Marina's final class of battleships was a long one. In 1931, France announced construction of the new Dunkerque class of battleship which drove the Italians to respond in kind. The original design work resulted in an orthodox ship of 35,000 tons armed with six 16in guns in three twin turrets and a speed of 28–29kn, but this design was rejected in favour of a larger ship with a main battery of nine 15in/50 guns in three triple turrets. The Italians wanted to move up to a 16in gun but the design and production of such a gun would have delayed construction of the new class. The 15in/50 gun had already been designed for a previously cancelled battleship design which meant construction of the new class could begin much sooner.

The keels for the first two ships, *Vittorio Veneto* and *Littorio*, were both laid down on 28 October 1934. Construction took until May 1940, which meant that the ships were still working up when Italy entered World War II in June 1940. Two more ships, *Impero* and *Roma*, were laid down in May and September 1938, respectively, by which time Italy was no longer bound by any naval treaty limitations. Construction of *Roma* was completed on 14 June 1942, but *Impero* was never completed.

The final design for the Vittorio Veneto class produced a well-balanced ship with above-average firepower, good protection and above-average speed. It is important to

note that the success of Italian designers was largely attributable to the fact that Italian naval authorities permitted the ships to exceed 40,000 tons, well over the naval treaty limit of 35,000 tons. It was not just the Italians who experienced difficulties in producing a balanced design with a good combination of firepower, protection and speed on a 35,000-ton hull. American, British and French battleship designers also exceeded the 35,000-ton limit, but not with the same blatant disregard and not by the same amount.

The main battery was composed of the Italian-designed 15in/50 gun, the first gun of that size fitted on any Italian battleship. The nine guns were fitted on three triple turrets and were the dominating feature of what was a very attractive ship. Two turrets were placed forward and the third aft; the latter turret overlooked the quarterdeck where the aircraft catapult was located. This arrangement protected the aircraft on the quarterdeck from blast damage from the main guns. Each triple turret weighed 1,570 tons, as much as most destroyers of the day, and was heavily protected with face armour of 14in and side and roof armour 8in thick.

Italian designers considered a heavy secondary armament to be necessary for defence against torpedo attack from the large fleet of French destroyers. However, they continued the inefficient practice of providing separate batteries to contend with enemy surface ships and air attack. The secondary battery against surface

Vittorio Veneto was completed in May 1940 but had not finished trials by the time Italy entered World War II on 10 June 1940. This is a view of the ship running trials. Note the superstructure with the two rangefinders on top and the clearance of the aft 15in triple turret over the quarterdeck where the aircraft catapult was fitted. (M. Brescia Collection)

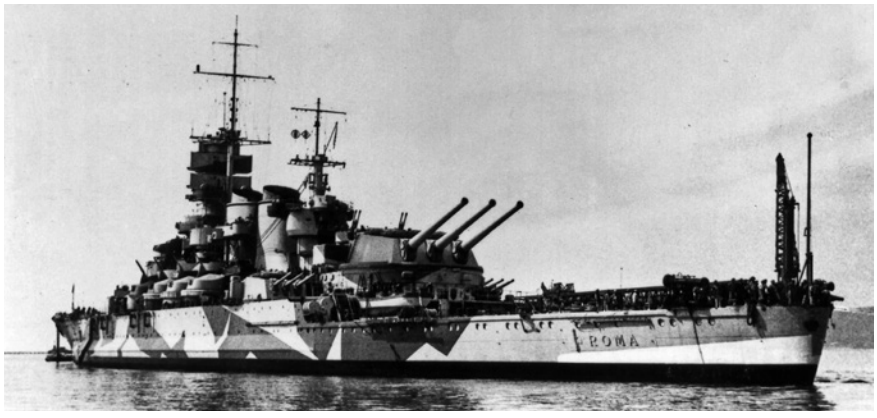
attack was composed of 12 6in L/55 guns fitted in four triple turrets, two on each beam. A battery of 12 3.5in/50 single mounts was provided for long-range anti-aircraft protection.

The protective scheme for the new class was slightly inferior to that of other contemporary foreign battleship designs, though the Italian designers were confident that it provided adequate protection against enemy battleship gunfire. The main belt was relatively thin and shallow and consisted of 11in of armour with a 2.75in outer plate. Italian designers did not fully employ the 'all or nothing' concept in which armour was only placed over vital areas with non-vital areas being left unprotected, because forward of the armoured citadel the side armour was reduced to just over 5in; no side armour was fitted aft of the armoured citadel.

Horizontal protection was heavy for a battleship designed in 1932, before the threat of air attack was fully appreciated. Protection over the machinery spaces was just over 6.5in thick, tapering to just over 6in outboard. Magazine protection was an impressive 6.5–8.5in. The turret barbettes were covered by a not-so-impressive 5.9in of armour. The conning tower was unlike that of foreign designs; on the Vittorio Veneto class the entire bridge tower was provided with some level of armoured protection, the most armour being placed on the levels on which the captain's and admiral's bridges and fire-control stations were located.

The Italians devised an elaborate underwater protection scheme which was named after its designer, Umberto Pugliese. The Pugliese system was also placed on the four older Regia Marina battleships during their extensive modernization, but their smaller beams meant that the system could not be fitted in full, so the Vittorio Veneto-class ships were the only Italian battleships to receive the entire system. The system was designed to provide protection against an explosion of 770lb of TNT. To provide this level of protection Pugliese designed a multi-layered system consisting of an angled exterior belt covering the bulged lower hull and two interior longitudinal bulkheads. There was a semi-circular space between the longitudinal bulkheads and the outer belt armour included a cylinder that was designed to act as a shock absorber. This cylinder was filled with fuel oil, water or a mixture of both and had an empty cylinder placed within it. The force of an underwater explosion was designed to hydraulically crush the cylinder to dissipate the force of the explosion. This system was not always successful under wartime conditions, however, because it suffered from two defects. One was caused by a manufacturing issue when rivets had to be used instead of welding and the rivets were unable to handle the explosive stresses placed on the seams. The other defect which reduced the effectiveness of the system was the desire to maintain the required hull form for high speed, which meant that the maximum diameter of the hollow cylinder could not be maintained throughout the entire length of the area covering the armoured citadel.

The propulsion system was designed to achieve a top speed of 30kn. This required 130,000shp which called for eight boilers in four boiler rooms to drive the four sets of turbines. Under trial conditions in 1939, *Vittorio Veneto* and *Littorio* developed greater than their design power and reached over 31kn even with a full displacement of over 41,000 tons. Under wartime conditions, both ships were still able to make 29kn.



This is *Roma* in the summer of 1942 after completion that June. The primary difference between *Roma* and the two previous ships in the Vittorio Veneto class was the increased height of the bow. *Roma* joined the Italian battle fleet too late to have any realistic opportunity to engage the British and was sunk on 9 September 1943 after being struck by a Fritz X radio-controlled glide bomb dropped by a Luftwaffe Do 217 bomber while en route to Malta for internment after the declaration of an armistice between Italy and the Allied powers. (M. Brescia Collection)

BATTLESHIP DESIGN COMPARISON

The battleships available to both the Royal Navy and Regia Marina at the start of the naval war in the Mediterranean dated from World War I. Both navies carried out extensive modernization of their dated battleships, but the results were quite different. The difference stemmed from the fact that the Royal Navy's Queen Elizabeth-class battleship was a fundamentally better ship and was better able to take modernization. Most importantly, these ships were armed with 15in/42 guns, which made them formidable offensive platforms and gave the Royal Navy five battleships with greater firepower than the modernized Italian battleships with their 12.6in/44 guns. The Queen Elizabeth-class ships were also better protected and enjoyed a larger zone of immunity to the Italian 12.6in/44 guns than the modernized Italian battleships had against the British 15in/42 guns. The advantages enjoyed by the British battleships were obvious, but just as obvious was the Italian battleships' advantage in speed which allowed the Regia Marina to select when and for how long it wanted to engage in a gunnery duel with the Royal Navy's more powerful battleships. This speed advantage was important because the Regia Marina was under orders to avoid engagements unless its battleships enjoyed a clear superiority. It also placed a premium on the ability of torpedo bombers operating from the Royal Navy's aircraft carriers to damage the Regia Marina's battleships to the extent that they could not disengage and escape from the Royal Navy's battle line.

The arrival of the Vittorio Veneto-class battleships altered the equation. These ships possessed slightly better firepower and protection compared to that of the Queen Elizabeth-class battleships. In addition, they still enjoyed a clear speed advantage which permitted the Regia Marina to dictate the terms of an engagement. Now victory depended on other, less obvious, factors than comparing the size of a battleship's guns and the thickness of its armour. These factors included the abilities of the task-force commander, the training of a battleship's crew, the fire-control systems used by each navy, main-gun salvo dispersion, the presence of radar and the effects of air power. All these factors combined to play a role in determining the winner of an engagement involving battleships.

THE STRATEGIC SITUATION

THE BRITISH SITUATION

In June 1940, the naval situation in the Mediterranean was turned on its head. Italy entered World War II on the 10th, just in time for Italian dictator Benito Mussolini to attack France before that country surrendered to Germany. When France surrendered on 22 June, the entire French fleet was removed from the Allied order of battle. The Royal Navy now had to bear the naval war against Italy alone. The British had the advantage of controlling both ends of the Mediterranean, but naval operations became a major drain on British resources.

The Mediterranean Fleet was one of the Royal Navy's principal commands. Its main base was at Malta with secondary bases at Alexandria in Egypt and Gibraltar on the southern coast of Spain. At the start of the naval war in the Mediterranean, the Mediterranean Fleet had a strength of four battleships (*Warspite*, *Malaya*, *Royal Sovereign* and *Ramillies*), one aircraft carrier (*Eagle*), six light cruisers and 21 destroyers. The fleet was commanded by Vice-Admiral (later Admiral) Sir Andrew Cunningham who had extensive experience in the Mediterranean. The Admiralty in London was known to meddle in fleet operations, but in the traditions of the Royal Navy the local commander was expected to exercise aggressive control of his forces. The entry of Italy into the war forced the Mediterranean Fleet to abandon Malta as its primary base because it was practically devoid of air defences and was located only a short distance from Axis air bases on Sicily. The bulk of the Mediterranean Fleet was moved to

Malta was the Mediterranean Fleet's main base but was not used as a major fleet base until after the armistice with Italy in September 1943. This 1938 view shows Malta's Grand Harbour packed with ships. In the foreground is the modernized *Warspite*. *Queen Elizabeth* is shown at top left in its pre-reconstruction configuration. Behind the battleships can be seen a destroyer tender, a Southampton-class light cruiser and two County-class heavy cruisers. (M. Brescia Collection)

Alexandria where maintenance facilities were inadequate. British submarines continued to operate from Malta, however, and a surface force was briefly moved to the island in late 1941 to attack Italian convoys moving to Libya.

France's surrender left a naval void in the Western Mediterranean which had to be filled. The Admiralty's response was to create Force H under Vice-Admiral Sir James Somerville and base it at Gibraltar. This was a small but balanced force with the usual composition of an aircraft carrier, one or two battleships or battlecruisers and several light cruisers and destroyers. From Gibraltar, Force H operated in the Eastern Atlantic or Western Mediterranean. Because most convoys headed for Malta came from the west, Force H was a major factor in Mediterranean operations. The Admiralty reinforced Force H as and when required to enable it to escort convoys to Malta.

The Mediterranean Fleet had a multitude of missions at the start of the naval war in the Mediterranean. Among these were the requirement to bring the Regia Marina to battle whenever and wherever possible; to protect the movement of reinforcements to the fleet and other garrisons in the Mediterranean; to gain control of the Eastern Mediterranean to protect Egypt, Palestine and Cyprus; to attack Italian SLOCs to Libya and to interrupt Italian trade with ports on the Black Sea.

THE ITALIAN SITUATION

While the traditional enemy of the Regia Marina was France's Marine nationale, in the 1930s an aggressive Italian foreign policy created the conditions whereby war with the United Kingdom was inevitable. Mussolini took his expansionist foreign policy to the next level when he declared war on the United Kingdom and France on 10 June 1940, when it seemed that Germany was on the verge of defeating France. Despite warnings from his service chiefs that the Italian military was not ready for war, Mussolini entered World War II with the expectation of gaining easy spoils in the peace negotiations after what he believed would be a short conflict. The war would also be a way to reduce Italy's vulnerability to economic strangulation by the United Kingdom and for Italy to become the pre-eminent Mediterranean power.

Mussolini's belief that the war would be short had profound implications for the Regia Marina and its operational conduct. Despite the fact that it was the most ready

of Italy's armed forces, the Regia Marina lacked the means to conduct a prolonged war successfully. Losses to the fleet, especially battleships, could not be replaced by Italy's weak shipbuilding industry. Given the presumption of a short war, and the inability to replace losses, Italian naval planners were loath to risk the fleet. In fact, the need to maintain the fleet was an overriding requirement from a strategic point of view because it underpinned Italy's status as a major Mediterranean power, while from an operational perspective the mere existence of the battle fleet exerted control over the Central Mediterranean. All this made Italian naval planners cautious, but this should not be confused with an unwillingness to fight on the part of the Regia Marina.

The Regia Marina had several primary missions foremost of which was the requirement to exert control over the Central Mediterranean. This would prevent the movement of British naval forces and shipping through the area and would allow the maintenance of communications with Libya in North Africa and the Balkans. The convoy routes from Italy to Libya had to be protected; failure to do so meant that any attempt to defend the colony was doomed.

The Regia Marina's war plan, issued on 29 May 1940, was conservative. It envisaged offensive operations in the Central Mediterranean whereby the Strait of Sicily would be blockaded. Only light forces would operate in the Western and Eastern Mediterranean to harass British SLOCs. Italian SLOCs to Libya and Albania had to be protected. The battle fleet would be used, but only under conditions of equal or superior strength. Submarine and air operations were to be co-ordinated with the surface fleet. The war plan called for the battle fleet to be used against the Royal Navy's Mediterranean Fleet before the latter could be reinforced in a battle fought close to friendly bases.

Even in this strategically defensive construct, the Regia Marina intended to employ its battle fleet against the Mediterranean Fleet. By fighting near friendly bases, and with the assistance of submarine and air forces, favourable conditions for an engagement could be created. Should favourable conditions not exist, the battle fleet would not be risked. The Regia Marina did not intend to commit heavy units in the Western and Eastern Mediterranean; when it did conduct a major operation into the Eastern Mediterranean the result was a disaster.

As the naval war in the Mediterranean dragged on, the Regia Marina continued to adhere to these sensible guidelines. As far as the battleships were concerned, the Regia Marina employed them aggressively on the operational level to achieve their primary missions until fuel shortages became crippling. However, the aggressive commitment of battleships on the operational level did not translate to comparable aggression at the tactical level for the reasons already discussed. At the start of the naval war in the Mediterranean, with only the two Conte di Cavour-class battleships available, the battle fleet was employed more conservatively. Only when the other battleships – especially those of the new Vittorio Veneto class – entered service would the opportunity to seek battle under favourable circumstances exist. In any event, it is incorrect to believe that the Regia Marina's battle fleet hid in harbour during the war.

Italian naval operations were controlled by supreme naval headquarters called Supermarina. The Regia Marina's chief-of-staff, Ammiraglio d'Armata Domenico Cavagnari, commanded Supermarina but it was his deputy, Ammiraglio di Squadra

Ammiraglio di Squadra Arturo Riccardi (left) accompanies Großadmiral Erich Raeder, the commander-in-chief of Germany's Kriegsmarine, at Merano, Italy, in February 1941. (ullstein bild/ ullstein bild via Getty Images)

Odoardo Somigli, who supervised the fleet's routine operations. In December 1940, Ammiraglio di Squadra Arturo Riccardi and Ammiraglio di Squadra Inigo Campioni assumed the roles of commander and deputy, respectively. This change of command reduced the degree of centralized control exercised by Supermarina, but throughout the naval war in the Mediterranean Supermarina discouraged tactical commanders from exercising any real degree of initiative. The fact that Supermarina liked to intervene in every aspect of naval operations was bad enough; even worse was the slowness of the staff to formulate orders, which meant that by the time it issued orders they were time-late and out of touch with the realities at sea.

In 1928, the fleet had been divided into two fleets (*squadre*). The 1ª Squadra was based at La Spezia in northern Italy and the 2ª Squadra at Taranto in southern Italy. It was intended to combine the two *squadre* into a single *squadra* with a single commander, but at the start of the naval war in the Mediterranean they still both existed. The 1ª Squadra included both of the operational battleships, three heavy cruisers, five light cruisers and six destroyer divisions with a total of 24 destroyers. The 2ª Squadra consisted of four heavy cruisers, six light cruisers and four destroyer divisions with another 16 destroyers. The large submarine force was under an independent *squadra*. A number of regional naval commands were allocated a small number of old destroyers, a large number of torpedo boats and other small combatants.

The two s*quadre* were united for the first time at the battle of Calabria (known as the battle of Punta Stilo in Italy) on 9 July 1940. The *squadre* continued to operate independently until 9 December 1940 when they were combined into a single force. On 12 January 1942, the two-*squadre* system was brought back but both *squadre* were now under the control of a single entity known as the Forze Navali ('Naval Forces'). In January 1943, all the Regia Marina's battleships were gathered into the 1ª Squadra and all of its cruisers into the 2ª Squadra. Only three months later, the post of Comando in Capo delle Forte Navali da Battaglia ('Commander-in-Chief, Naval Battle Forces') was established which again united the two *squadre*.

TECHNICAL SPECIFICATIONS

CONTRASTING DOCTRINE

The Royal Navy's 1939 fighting instructions recognized the big guns of the battleship as the fleet's key weapon. Battleships were to concentrate fire on a few targets to score early in any engagement. The tactical objective was to achieve the maximum volume of fire in order to overwhelm the enemy. Decisive results could only be achieved if the battleships closed to within 12,000–16,000yd of the enemy, and Royal Navy battleships were modernized with additional horizontal protection to permit them to survive the run-in to the desired engagement range. Night fighting was encouraged if the enemy showed signs of weakness or if it was considered possible to reach a decisive conclusion under cover of darkness. It was even encouraged to accept action between battleships at night if the day action had not achieved decisive results. In the 1930s the British worked to improve their night-fighting tactics and training, including the use of battleships' gunnery. In comparison, other navies emphasized the use of torpedoes at night or else eschewed night combat altogether.

The Regia Marina intended to fight its battles at extended ranges; in fact, most naval battles in the Mediterranean were fought in daylight with good visibility which facilitated this doctrine. Several factors shaped the Italian desire to fight at extended ranges. Foremost was the superior range of Italian guns which gave them the ability to engage at ranges beyond those of their enemies. Another key factor was the superior speed of all Italian battleships over their British counterparts. Theoretically, this

permitted the Regia Marina to keep the action at extended range. It also gave the Regia Marina the ability to choose whether and when to break off an action. Finally, and with the exception of the modern battleships, the rebuilt Italian battleships possessed inferior protection compared to that of British battleships, which made the Regia Marina reluctant to close the engagement range to a point where Royal Navy heavy ships were more likely to deal punishing blows.

Italian doctrine for surface action called for fire to be opened at long range. Gunnery was conducted in a deliberate manner with fire being adjusted after each salvo. Once the proper range had been found, the target would be engaged with rapid fire to inflict maximum damage. After the enemy force had been attrited, decisive combat at short range would ensue. Obviously, this doctrine hinged on accuracy at long range. In the pre-radar era, however, it was difficult for any World War II navy to demonstrate consistent accuracy at extended range, but the Regia Marina was as good as any other navy in this respect.

The Regia Marina had made little preparation for night fighting and, if given a choice, preferred to end an action when darkness fell. This certainly held true for its battleships, which were not to be risked at night. This placed the Regia Marina at a severe disadvantage against the Royal Navy, which stressed night fighting.

BRITISH BATTLESHIPS

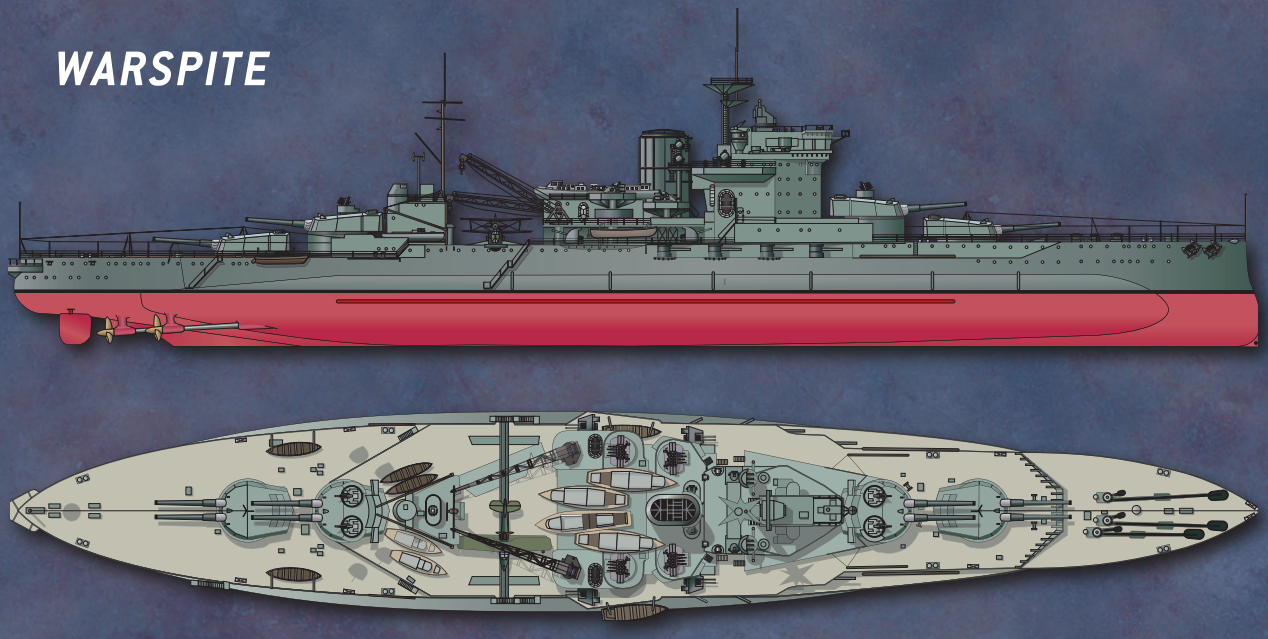
Only the battleships of the Queen Elizabeth and Royal Sovereign classes are examined in detail because these were the only battleships employed in the engagements covered in this book.

The five ships of the Queen Elizabeth class were modernized to various degrees before the start of World War II. Three ships of the class (*Queen Elizabeth*, *Warspite* and *Valiant*) were essentially rebuilt; the other two (*Barham* and *Malaya*) received much less work. The main effect of the reconstruction work was to increase protection; speed and main-gun firepower were left essentially unchanged.

Modernization began in 1924 when *Warspite* went into the yards. In this first phase, the ship received anti-torpedo bulges which extended to within 90ft of the bow and stern and additional anti-aircraft guns. In 1934, *Warspite* returned to Portsmouth for reconstruction which entailed the removal of the superstructure and the gutting of the hull. The propulsion system was replaced with six new boilers and direct-drive turbines which brought maximum output to 80,000shp. With the increased displacement following modernization, speed was recorded as 23.8kn on trials. Horizontal protection against bombs or plunging fire was improved with an armoured deck forward of 3in, 5.5in over the magazines and 3.5in over the machinery spaces.

Warspite's main battery remained as before with eight 15in/42 Mk I guns in four twin turrets. The turrets were modified to increase the guns' elevation to 30 degrees which increased their maximum range by almost 7,000yd. The secondary battery was reduced to eight 6in Mk XII guns in casemates. Anti-aircraft protection was greatly augmented by a mix of four 4in twin mounts, two eight-barrel 2-pounder pom-poms and additional .5in machine guns atop two of the main-battery twin turrets.

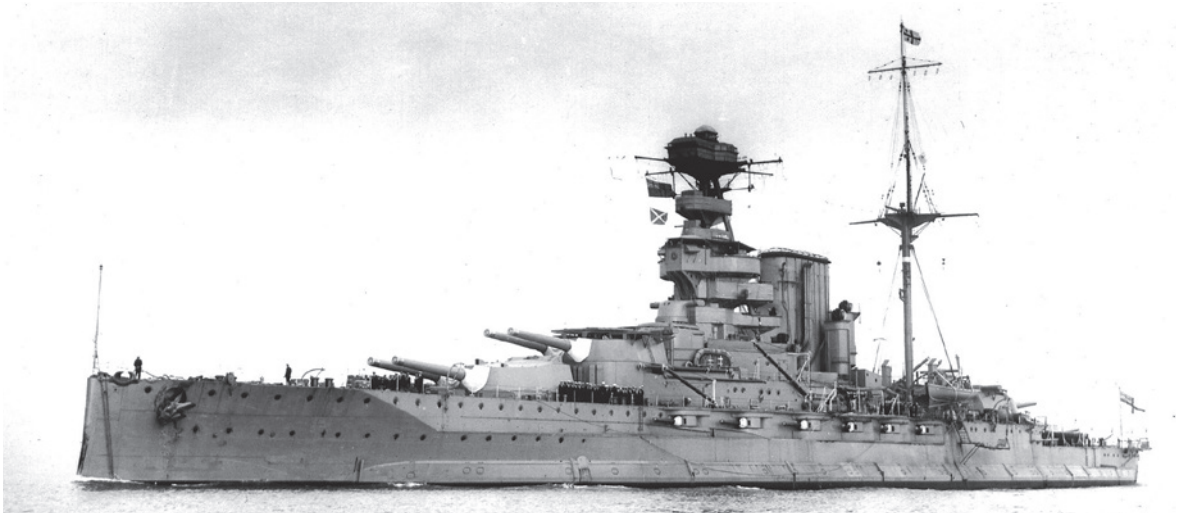
WARSPITE



One of the most famous British battleships of World War II was the modernized Queen Elizabeth-class ship *Warspite*. This is how the ship appeared in 1940. Note the massive forward superstructure and the main battery of four 15in twin turrets. The extensive modernization included upgrades in protection and speed and an increase in the elevation of the 15in turrets which resulted in a considerable increase in range. *Warspite* was present at Calabria and Cape Matapan and played a key role in both battles.

Queen Elizabeth and *Valiant* were also rebuilt along similar lines to each other. During 1926–27, *Queen Elizabeth* received anti-torpedo bulges and an additional four 4in anti-aircraft guns. Beginning in 1937, the ship underwent a major reconstruction. New boilers and turbines were fitted, bringing total output to 80,000shp and top speed to 24kn. Protection was increased to that fitted on *Warspite*. The four-turret, eight-gun main-battery arrangement was retained but the elevation of the 15in/42 Mk I guns was increased to 30 degrees. The entire secondary battery of 16 6in guns was replaced with 20 4.5in dual-purpose guns in ten twin turrets. In addition to the 4.5in guns, four eight-barrel 2-pounder pom-poms and four quintuple .5in machine guns were fitted for anti-aircraft work. *Valiant*'s modernization and appearance was very similar to that of *Queen Elizabeth*.

Valiant pictured after completion of its reconstruction at Devonport Dockyard, 1937–39. The battleship emerged with new machinery, a new bridge structure, increased elevation for the four 15in twin turrets and a secondary battery composed of 20 4.5in Mk I dual-purpose guns in ten twin turrets as evident in this view. Note also the amidships aviation facilities. In December 1939, *Valiant* received a Type 279 early-warning radar. (NH 97486 courtesy of the Naval History and Heritage Command)

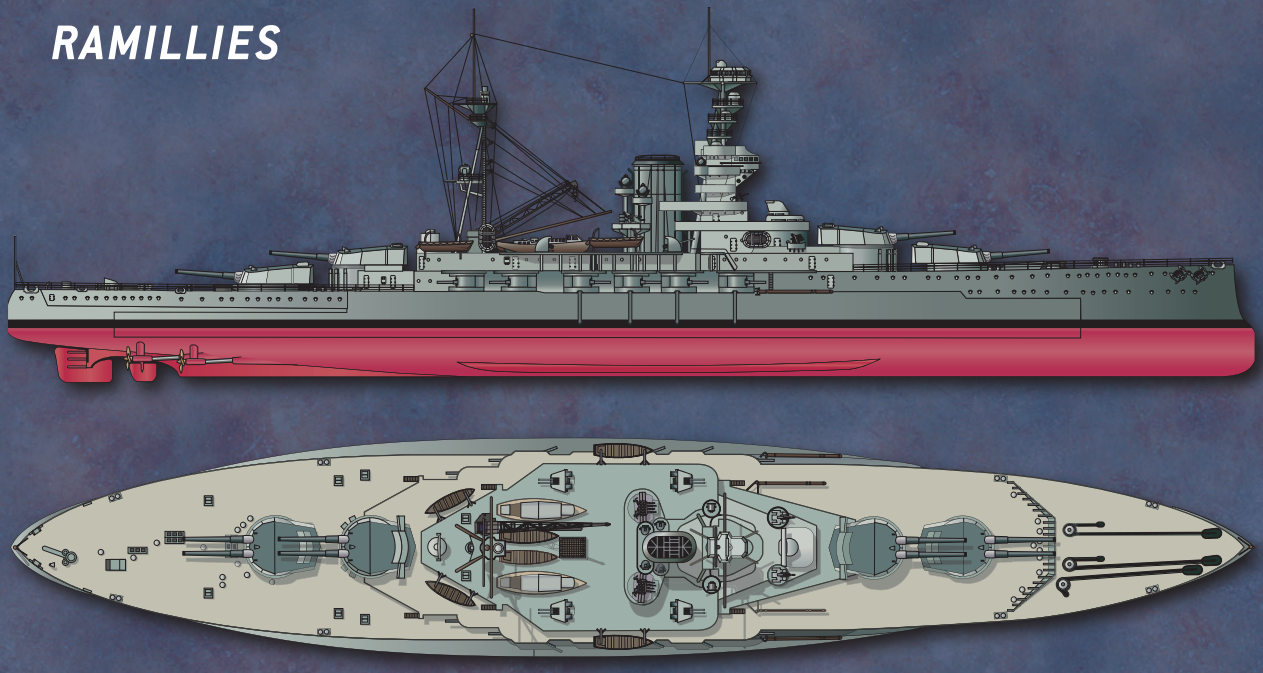


Warspite was the first of three Queen Elizabeth-class battleships to undergo major modernization as shown here in the early 1930s. The bridge structure was reworked (giving the battleship a much heavier appearance) to provide adequate room for more complex fire-control equipment, searchlights and command staff. The two stacks have also been trunked into one. (M. Brescia Collection)

Queen Elizabeth-class specifications (1940)	
Displacement (standard)	*Queen Elizabeth* and *Valiant* 31,795 tons; *Warspite* 31,315 tons; *Malaya* and *Barham* 27,940 tons
Dimensions	Length (overall) 643ft 9in; beam 104ft; draft variable from 29ft to 34ft
Machinery	*Queen Elizabeth* and *Valiant* eight boilers and four turbines producing 80,000shp; *Warspite* six boilers and four turbines producing 80,000shp; *Malaya* and *Barham* 24 boilers and four turbines producing 56,000shp
Speed	*Queen Elizabeth*, *Valiant*, *Malaya* and *Barham* 24kn; *Warspite* 23.5kn
Bunkerage/range	*Queen Elizabeth* and *Valiant* 3,393 tons; *Warspite* 3,501 tons for 5,830NM; *Malaya* and *Barham* 3,300 tons for 8,600NM at 12kn
Protection	Main belt 13in; main deck 1–5in; conning tower 11in; barbette 10in; main turret face 13in
Main battery	Eight 15in/42 Mk I guns in four twin turrets
Secondary battery	*Queen Elizabeth* and *Valiant* 20 4.5in Mk I in twin turrets; *Warspite* eight 6in Mk XII in casemates; *Malaya* and *Barham* 14 6in Mk XII in casemates
Anti-aircraft battery	Four eight-barrel 2-pdr mounts; four quad .50in machine guns
Crew	1,124 men

In contrast, *Malaya* received only moderate modernization. During 1927–29, the battleship was fitted with anti-torpedo bulges and given new anti-aircraft guns. The main modernization took place in 1934–36, during which *Malaya* received additional horizontal armour and a modern anti-aircraft fit in which the single 4in anti-aircraft gun mounts were replaced by twin mounts and two eight-barrel 2-pounder pom-poms and two quadruple .5in machine guns were added. The four-turret, eight-gun main battery and 14-gun secondary battery and the ship's machinery were not upgraded.

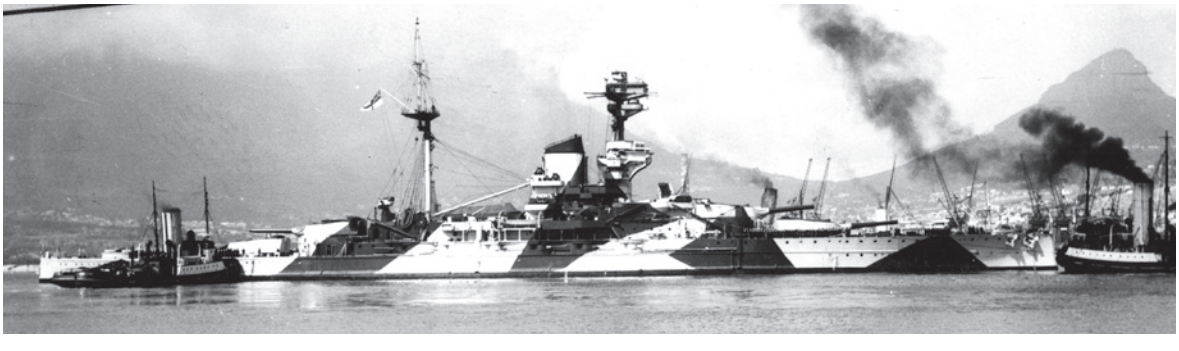
RAMILLIES



Ramillies was completed in 1917 and marginally modernized between the wars. These views show the battleship as it appeared in 1940. *Ramillies*' primary attribute was its powerful main battery of eight 15in/42 Mk I guns, as evident in the four twin turrets shown here.

Barham was the least modernized ship of the class. The principal modernization took place in 1931–34 during which time it was fitted with anti-torpedo bulges, received a limited anti-aircraft upgrade in the form of two eight-barrel 2-pounder pom-poms and two quadruple .5in machine guns, and was fitted with additional armour over the magazines and 6in casemates. The four-turret, eight-gun main battery, 14-gun secondary battery and the ship's machinery were not upgraded.

All five Queen Elizabeth-class ships were fitted with double-ended aircraft catapults before the war and radar soon after the outbreak of war.



Royal Sovereign in 'dazzle' camouflage, *c*.1940. (Arkivi/Getty Images)

Royal Sovereign-class specifications (1940)	
Displacement (full, class average)	31,560 tons
Dimensions	Length (overall) 620ft 7in; beam 88ft 6in (*Ramillies* 101ft 6in); draught 33ft 7in under full load conditions
Machinery	18 boilers and four turbines producing 40,000shp
Speed	20kn by 1939
Range	7,000NM at 10kn
Protection	Main belt 13in; main deck 1–4in (*Royal Oak* 1–6in); conning tower 11in; barbette 4–10in; main turret face 13in
Main battery	Eight 15in/42 Mk I guns in four twin turrets
Secondary battery	12 6in Mk XII in casemates
Anti-aircraft battery	Eight 4in Mk XVI in four twin mounts; two eight-barrel 2-pdr mounts; two quad .50in machine guns
Crew	1,146 men

Although *Royal Sovereign* and *Royal Oak* received anti-torpedo bulges in the 1920s, the five ships of the Royal Sovereign class did not receive any significant modifications before the start of World War II. Most importantly, the propulsion systems of these ships were never upgraded, which left them increasingly unable to keep up with the other ships of the battle line. More than anything, this lack of speed condemned them to second-line status. The five ships were built with a substantial level of protection, but with one exception this was never improved. *Royal Oak* was the only ship of the class to receive a significant upgrade to its protection, receiving 4in of armour over the magazines and 2.5in over the machinery during a 1934–36 modernization.

Armament of this class was largely unaltered before the war. The four 15in twin turrets did not receive the modification required to increase their elevation to 30 degrees, which meant they possessed less range than the modified turrets of the Queen Elizabeth class. All five Royal Sovereign-class battleships entered World War II with 12 6in casemate guns. Their anti-aircraft batteries were increased to four 4in twin mounts supplemented by a pair of eight-barrel 2-pounders and a pair of quadruple .5in machine guns. *Royal Oak*, lost on 14 October 1939 after being torpedoed by *U-47*, retained its four underwater torpedo tubes.

ITALIAN BATTLESHIPS

Between the wars, the Italians were aware of the protection and firepower deficiencies of the Conte di Cavour-class battleships. What resulted was an exercise in false economy. The decision was made not just to modernize the two ships, which would have resulted in only marginal capability improvements, but to rebuild them in what was the most extensive battleship rebuild project carried out by any navy between the wars. The work was so extensive that only 40 per cent of the original ship was left.

This beam view of *Giulio Cesare* in 1940 gives a good view of the ship's configuration after reconstruction. Note the absence of the amidships 12in triple turret, the new forward superstructure, the re-located stacks and the presence of new secondary and anti-aircraft batteries. (M. Brescia Collection)

The rationale for such a costly project was that the two battleships would provide a temporary counter to the new French Dunkerque class until the Vittorio Veneto class entered service. The entire undertaking was ill-considered because the result was a battleship with marginal capabilities compared to foreign battleships and also because it drained resources which could have been better spent getting the Vittorio Veneto class ready for service before the start of the war.

The rebuild work commenced in 1933 and did improve the capabilities of the Conte di Cavour class in all areas. Protection was upgraded in the form of an additional 3,227 tons of armour, most of which went into the ships' horizontal protection which went from 1in to just over 3in over the machinery spaces and 4in over the magazines. Underwater protection was addressed with the fitting of the Pugliese system. On the Conte di Cavour class this included the addition of a hollow curved bulkhead up to 2in thick in front of a 1in-thick torpedo bulkhead. The space in between was filled with hollow cylinders designed to absorb the energy of a torpedo or mine explosion.

Conte di Cavour-class specifications (June 1940)	
Displacement	Standard 26,140 tons; full load 29,032 tons
Dimensions	Length (overall) 611ft 7in; beam 92ft 10in; draught 30ft
Machinery	Eight boilers and two turbines producing 75,000shp (93,000shp on trials)
Speed	28kn
Range	2,472 tons of oil provided a range of 6,400NM at 13kn
Protection	Main belt 9.8in; main deck 3.1in over the machinery and 3.9in over the magazines; conning tower 10.2in; barbette 11in; main turret face 11in
Main battery	Ten 12.6in/44 guns in two triple and two twin turrets
Secondary battery	12 4.7in/50 in six twin turrets
Anti-aircraft battery	Eight 3.9in/47 in four twin turrets; eight 37mm/54 in four twin mounts; 16 20mm/65 machine guns in eight twin mounts
Crew	1,236 men

Speed was increased considerably by fitting a new bow that added 33ft to the ships' overall length and the replacement of the original machinery. The old boilers were replaced with eight superheated boilers. New turbines were also installed which increased power to 75,000shp; on trials, the ships developed over 93,000shp. Even with a greater displacement after modernization, the greater power increased the top speed to over 28kn.

The main and secondary batteries of both ships were changed. The 12in triple turret amidships was removed which reduced the main battery to ten guns in two triple and two twin turrets. The guns were re-bored and their calibre increased to 12.6in, which allowed for the firing of a heavier 1,157lb shell. Elevation of the turrets was increased to 27 degrees which produced a maximum range of 31,280yd. A new secondary battery was fitted consisting of six 4.7in twin turrets and four 3.9in/47 twin anti-aircraft guns in shielded mountings.

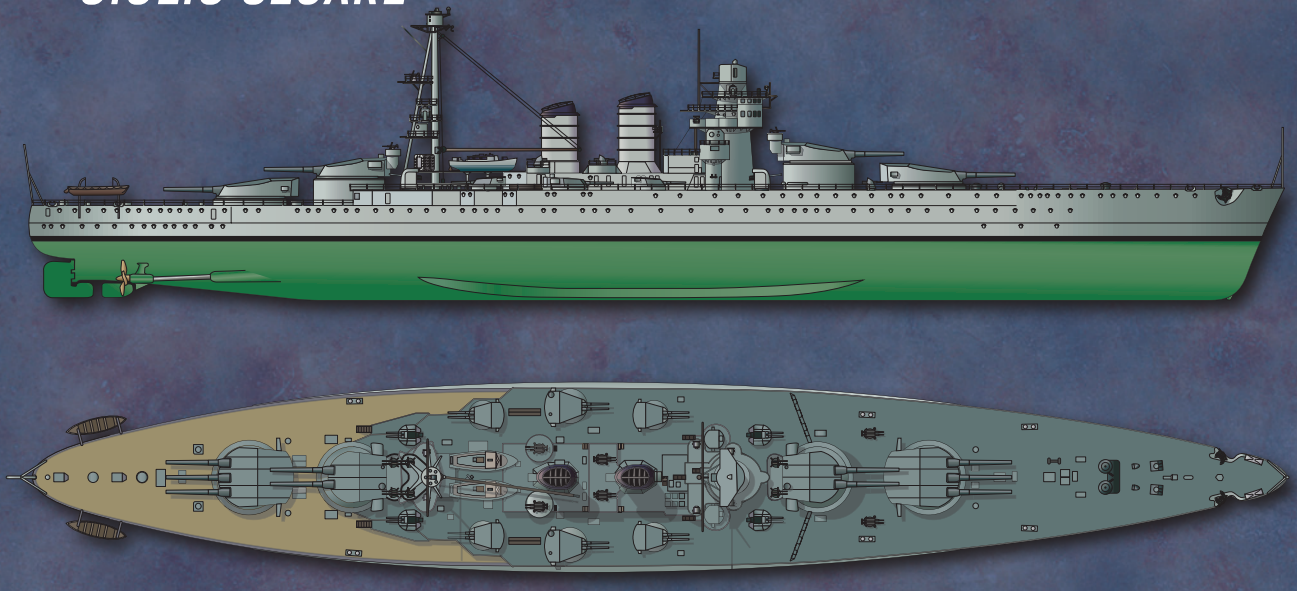
The apparent success of the Conte di Cavour-class rebuild, completed in 1937, prompted the Regia Marina to give the same treatment to the two ships of the Caio Duilio class. Work on both ships began in April 1937 and the project largely mirrored the rebuild of the Conte di Cavour class.

Caio Duilio-class specifications (1940 modernization)	
Displacement	*Caio Duilio*: standard 26,434 tons; full load 29,391 tons; *Andrea Doria*: standard 25,924 tons; full load 28,882 tons
Dimensions	Length (overall) 613ft 3in; beam 91ft 11in; draught 33ft 10in
Machinery	Eight boilers and two turbines producing 75,000shp
Speed	27kn
Range	6,400NM at 13kn with a maximum bunkerage of 2,550 tons
Protection	Main belt 9.8in; main deck 3.1in over the machinery and 3.9in over the magazines; conning tower 10.2in; barbette 11in; main turret face 11in
Main battery	Ten 12.6in/44 guns in two triple and two twin turrets
Secondary battery	12 5.3in/45 in four triple turrets
Anti-aircraft battery	Ten 3.5in/50 in ten single mounts; 15 37mm/54 in six triple and three single mounts; 12 20mm/65 machine guns in twin mounts
Crew	1,485 men

The protective scheme was augmented to the same extent as on the Conte di Cavour class. This included underwater protection because both ships were also fitted with the Pugliese system. It should be noted, however, that neither class had enough space to install the entire Pugliese system.

The original propulsion system was replaced with an eight-boiler, two-shaft configuration which developed 75,000shp. The ships' hull form was improved by the addition of a 36ft-long bow section which included a bulbous foot. Despite the increase in displacement after the rebuild, the ships' top speed rose to 27kn.

GIULIO CESARE



Giulio Cesare was a Conte di Cavour-class battleship completed in 1915. This is the ship's appearance in 1940 following a virtual rebuild which commenced in 1934. Note the main battery of ten 12.6in/44 guns in two triple and two twin turrets, the new secondary battery of four 4.7in twin turrets and the long-range anti-aircraft battery of eight 3.9in/47 guns in twin turrets. The ship's hull was lengthened to increase speed and the superstructure rebuilt and enlarged.

The modernization of the main battery was identical to that on the Conte di Cavour class. The 12in triple turret amidships was removed and the remaining four turrets were arranged in pairs fore and aft with the twin turret placed in a superfiring position over the triple turret. The main-gun calibre was increased to 12.6in which fired a heavier shell with better penetrating power.

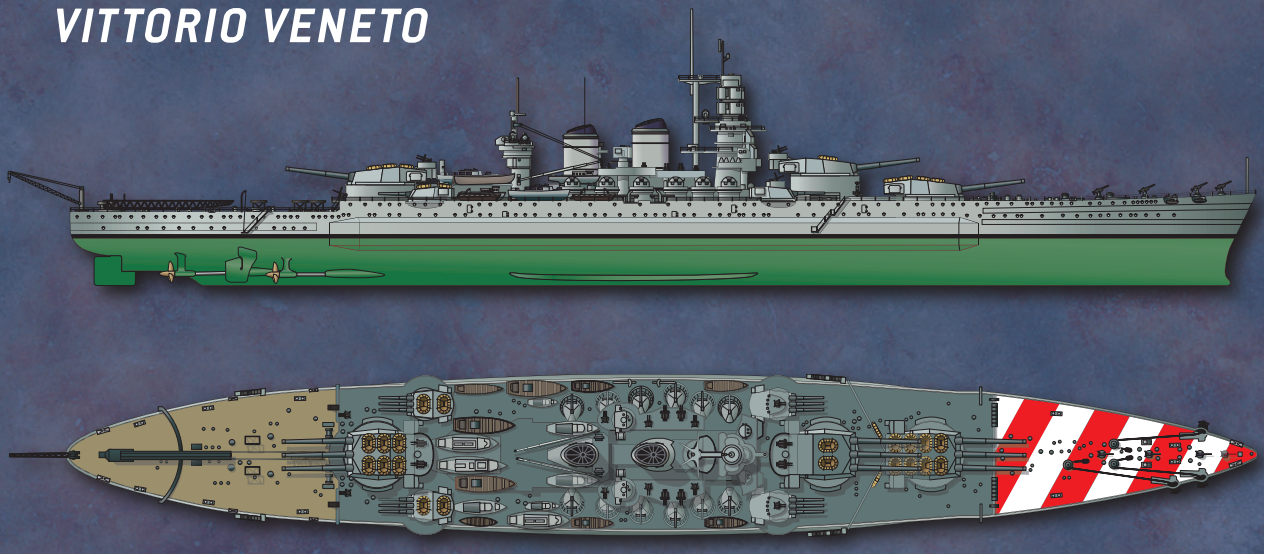
This fine view of *Andrea Doria* in 1940 shows the differences from the rebuilt Conte di Cavour class. In comparison, the Caio Duilio class had a larger forward superstructure, larger and more powerful secondary and anti-aircraft batteries, and did not have a tripod mainmast aft. (M. Brescia Collection)

Vittorio Veneto in 1940, soon after completion. (NH 47564 courtesy of the Naval History and Heritage Command)

Vittorio Veneto-class specifications (upon completion)	
Displacement	Standard 40,516 tons; full load 45,029 tons
Dimensions	Length (overall) 780ft; beam 108ft 1in; draught 34ft 4in
Machinery	Eight boilers and four turbines producing 130,000shp (134,000–139,000shp on trials)
Speed	29kn
Range	4,580NM at 16kn
Protection:	Main belt 13.8in; main deck 6.7in over the machinery spaces and 8.6in over the magazines; conning tower 8.1in; barbette 13.8in; main turret face 13.8in
Main battery	Nine 15in/50 guns in three triple turrets
Secondary battery	12 6in/55 in four triple turrets
Anti-aircraft battery	12 3.5in/50 in single mounts; 20 37mm/54 in eight twin and four single mounts; 20 20mm/65 machine guns in twin mounts
Crew	1,830–1,960

The main difference between the Conte di Cavour and Caio Duilio classes after their rebuilds was their secondary batteries. The new Caio Duilio class featured a much heavier secondary battery with four 5.3in triple turrets located two per side alongside the rebuilt forward superstructure. The long-range anti-aircraft battery was significantly augmented and consisted of ten 3.5in/50 guns in single mounts. These were enclosed and fully stabilized, but the stabilization system proved unsuccessful and was removed in 1942. *Caio Duilio* returned to service in July 1940 and *Andrea Doria* in October 1940.

VITTORIO VENETO

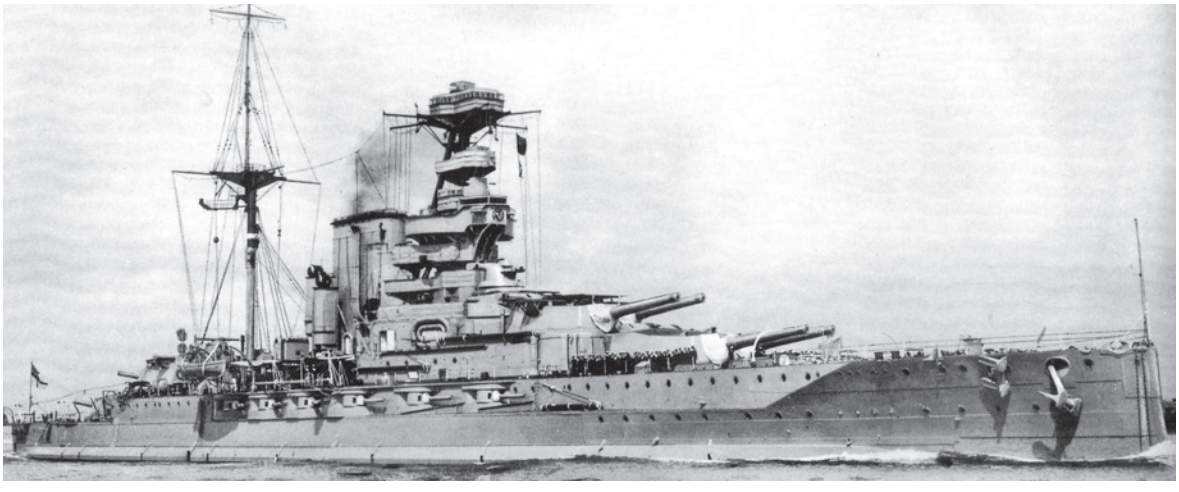


Vittorio Veneto was the lead ship of the final class of Italian battleships. These views show the ship in 1940 after completion. The ship projects an attractive and balanced appearance. Note the main battery of three large 15in triple turrets. The Italians continued the inefficient practice of separate secondary and anti-aircraft batteries, as clearly shown in these views.

The three ships of the Vittorio Veneto class were the epitome of Italian battleship design. They were elegant and balanced ships which gave the Regia Marina the ability to slug it out with the Royal Navy. *Vittorio Veneto* was completed in April 1940 and *Littorio* followed in May. Both ships required more fitting out and work-ups, so they were not ready for service when the naval war in the Mediterranean began. Of note, the Vittorio Veneto-class ships were the only Italian battleships to receive radar during the war. Unfortunately for the Italians, this did not occur until well into the war. *Littorio* received an experimental EC.3 *bis* radar in August 1941 and in April 1942 received an updated version. In September 1942, *Littorio* received an EC.3 *ter* radar. *Vittorio Veneto* received an EC.3 *ter* in June 1943. The third and last ship of the class, *Roma*, was not completed until June 1942 and was not ready for operations until August.

BATTLESHIP ARMAMENT

Without doubt, one of the Royal Navy's most successful gun designs was the 15in/42 Mk I main-battery gun. Noteworthy for its reliability and accuracy, this gun proved



Malaya pictured in 1935 after modernization. The ship's machinery was not modernized and the elevation of its 15in/42 Mk I main guns was not increased, which meant the range of the main battery was inferior to that of all Italian battleships. (M. Brescia Collection)

so successful that it was used on three classes of battleships and three classes of battlecruisers with little modification. The specifications in the table are for the guns aboard the Queen Elizabeth class which could be fired at 30 degrees elevation and those aboard the Royal Sovereign class which were restricted to 20 degrees elevation.

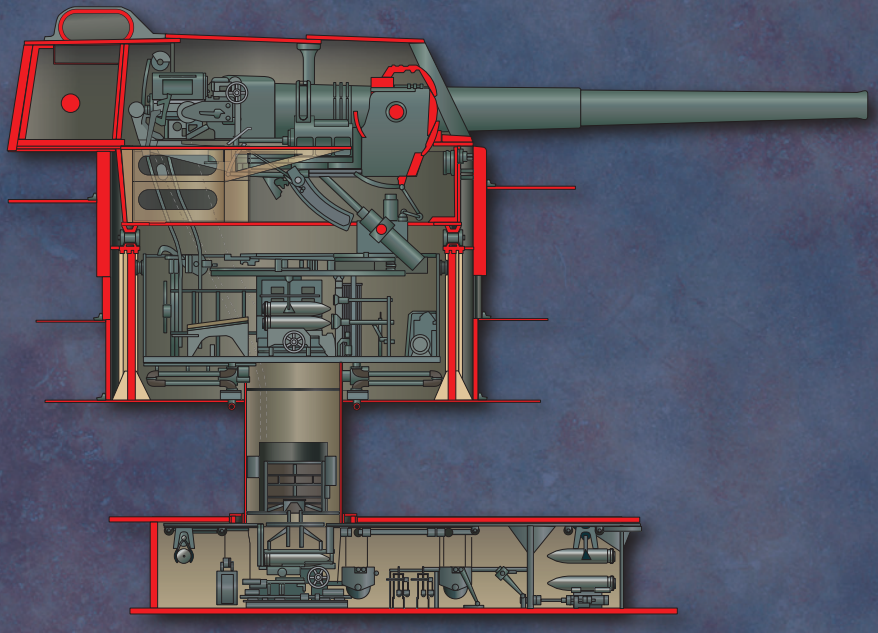
The original secondary-battery gun for both the Queen Elizabeth and Royal Sovereign classes was the 6in Mk XIII gun mounted in single casemates. Because this gun was designed to provide defence against torpedo boats, it had only a 14-degree elevation. After their extensive modernization, *Queen Elizabeth* and *Valiant* had all their casemate guns removed and replaced with the 4.5in Mk I or Mk III dual-purpose guns which fired a 55lb shell at a maximum elevation of 80 degrees.

Italian battleship main guns possessed impressive characteristics but were noteworthy for their lack of success under actual combat conditions, failing to sink a single enemy ship during the naval war in the Mediterranean. The biggest issue with these guns was their excessive salvo dispersion, which greatly hampered accuracy. The high muzzle velocity of the 15in/50 gun caused excessive barrel wear which contributed to this problem. The salvo-dispersion problem was even more prevalent for the re-bored 12.6in/44 guns mounted on the four older Italian battleships. Dispersion was also caused by excessive manufacturing tolerances, both of the guns themselves and the shells they fired.

British battleship main and secondary guns

Type	Maximum elevation	Maximum range	Rate of fire	Muzzle velocity	Shell weight
Main guns					
15in/42 Mk I	30°	33,550yd	2rd/min	2,458ft/sec	1,938lb
15in/42 Mk I	20°	26,650yd	2rd/min	2,458ft/sec	1,938lb
Secondary guns					
6in Mk XII	14°	15,660yd (at 20°)	3–4rd/min	2,807ft/sec	100lb
4.5in Mk I, Mk III	80°	20,750yd (at 45°)	12rd/min	2,449ft/sec	55lb

BRITISH BATTLESHIP FIREPOWER



The 15in/42 Mk I gun was carried by all ships of the Queen Elizabeth and Royal Sovereign classes. It fired a 1,938lb armour-piercing shell. On the modernized Queen Elizabeth-class ships, turret elevation was increased to 30 degrees, bringing the maximum range to 33,550yd. This was greater than the 12.6in/44 guns on the older Italian battleships, but far inferior to the 46,000yd+ of the new 15in/50 guns on the Vittorio Veneto class. Unmodernized British battleships with a turret elevation of 20 degrees possessed a range of 26,650yd.

The Italians considered a heavy secondary armament essential to counter the large destroyer force possessed by France's Marine nationale. The Italians failed to develop a reliable dual-purpose gun, however, which meant their battleships employed the space- and weight-consuming design practice of fitting both a secondary battery and

This fine photograph of *Andrea Doria* in October 1940 shows the battleship after completion of its rebuilding. The main battery is trained to port and gives an impression of power. In fact, the 12.6in/44 guns were ineffective: although they possessed a long range due to their high muzzle velocity, it was at the expense of high salvo dispersion. There is no record of an Italian 12.6in/44 gun hitting an enemy target during the naval war in the Mediterranean. (M. Brescia Collection)

Italian battleship main and secondary guns					
Type	**Maximum elevation**	**Maximum range**	**Rate of fire**	**Muzzle velocity**	**Shell weight**
Main guns					
12.6in/44 Model 1934, Model 1936	27°	31,280yd	2rd/min	2,722ft/sec	1,155lb
15in/50 Model 1934	35°	46,216yd	1.3rd/min	2,854ft/sec	1,951lb
Secondary guns					
4.7in/50 OTO Model 1933	42°	20,779yd	6rd/min	3,117ft/sec	52lb
5.3in/45 Model 1937	45°	21,435yd	6rd/min	2,707ft/sec	72lb
6in/55 Model 1934	45°	28,150yd	4.5rd/min	2,986ft/sec	110lb

a long-range anti-aircraft battery. The 6in/55 guns on the Vittorio Veneto class also displayed a serious salvo-dispersion problem.

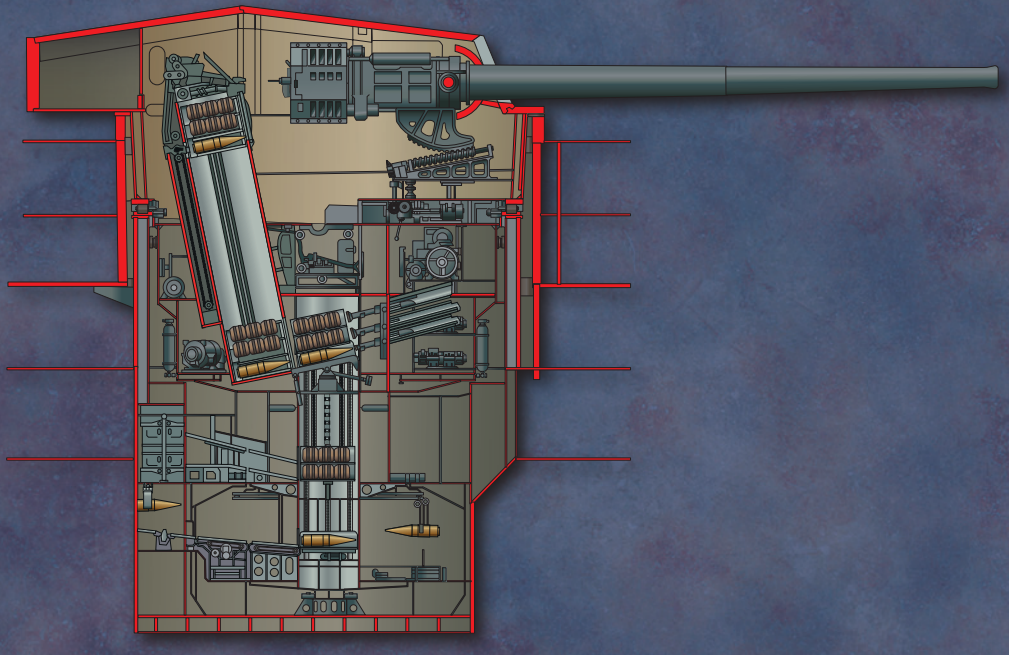
FIRE-CONTROL SYSTEMS

As the Royal Navy was generally short of funds between the wars, the fire-control systems aboard all existing battleships were not extensively modernized. Another reason for this low modernization priority was that the British did not consider long-range gunnery to be very effective. Coming out of World War I, British battleships were equipped with a number of 30ft and 15ft optical rangefinders, fire-control directors in their fighting tops and a fire-control table (actually a manually fed computer) which worked together to generate a fire-control solution.

Warspite was the first battleship to receive extensive fire-control modernization in the form of the Admiralty Fire Control Table (AFCT) Mk VII manually operated mechanical computer. This equipment was also fitted on the other modernized Queen Elizabeth-class battleships and it relied on the observations of the control officer and three other spotters on the ship. Data was also used from a spotting aircraft which was positioned over the ship to assess and report the target course and speed. (Spotting aircraft were used at the battle of Cape Matapan but were launched too late at the battle of Calabria.) The British combined the fire-control director and the rangefinder into what was called a director control tower (DCT) and it was integral to the AFCT. The DCT fed data to the AFCT on target course and speed which was correlated with other rangefinder readings. The AFCT calculated target bearing and the deflection needed for the battleship's turrets. The unmodernized Royal Sovereign class was fitted with two directors in the fighting top and one Dreyer Fire Control Table Mk IV.

The British had the advantage of radar, but its use was limited during the early part of the war. The Type 284 surface gunnery radar was tested on *King George V* in December 1940, but the device produced a broad beam so was only useful for determining range. Because of this, the Type 284 were nothing more than excellent rangefinders. Radar was used by *Valiant* at Cape Matapan.

ITALIAN BATTLESHIP FIREPOWER



The standard main-battery gun for the four older Italian battleships was the 12.6in/44 which fired a 1,155lb shell. By increasing muzzle velocity, the maximum range of this gun was increased to 31,280yd, almost equal to that of the modernized Queen Elizabeth battleships and superior to the range of the 15in guns on unmodernized British battleships. However, the increased muzzle velocity also exacerbated the salvo-dispersion problem for the 12.6in gun.

A normal salvo by British battleships with twin 15in gun turrets was one gun from each of the four turrets. While the first gun fired, the other was being reloaded. This kept the target under continuous fire. Once the proper deflection was found, a ladder system was used to correct range. Salvoes were fired with some spread which was corrected in 400yd increments until the target was straddled. Once the target was bracketed, the guns fired for effect in the hope of gaining a hit.

Italian main-battery fire-control systems were on a par with other navies of the period. After World War I, the Italians adopted the British Barr & Stroud system. This was licence-built and fitted on the Conte di Cavour and Caio Duilio classes. Target range was calculated optically with the aid of a fire-control computer. On the Conte di Cavour and Caio Duilio classes the main-battery director was mounted above the bridge structure and contained two to four 23.6ft-long paired rangefinders. On the Vittorio Veneto and Caio Duilio classes, the director was a fixed structure above the rotating rangefinders. The rangefinders were stabilized to avoid training errors. The fire-control director transmitted data below to the plotting room where a fire-control solution was generated. The plotting table plotted five different factors: range and bearing of the target, target course, target speed and the range rate.

THE COMBATANTS

OFFICERS AND MEN

THE ROYAL NAVY

The Royal Navy was blessed with a well-trained and highly skilled officer corps. At the start of World War II, the fleet was manned largely by regular officers. An officer began his naval training at the tender age of 13. If he passed the competitive entrance exams and interview, he began training as a cadet at the Royal Naval College at Dartmouth. When he became a midshipman, his training included time on a battleship or cruiser. The educational aspect of the training was criticized as being unbalanced because it was overly technical. Supplementing the regular officers were special entry officers who entered the Royal Navy at age 18 and spent 18 months in naval training.

After being commissioned, the new sub-lieutenant was posted to the Royal Naval College at Greenwich or sent to a large ship. When promoted to lieutenant, he became a full naval officer and could remain a non-specialist officer or apply to enter a specialty which entailed another year of school. Of the specialties open to junior officers, the most highly regarded was gunnery. After eight years as a lieutenant, the officer was eligible for promotion to lieutenant commander.

At the beginning of World War II, the Royal Navy was manned by 131,000 regulars and 73,000 reservists. These were all volunteers and many already had years of service under their belts, making for a very experienced force. The pressures of war forced the Royal Navy to expand quickly and dramatically, however, until it reached a total of 783,000 men by June 1945. Most of these new additions were conscripts or short-term volunteers.

OPPOSITE

Sailors sleeping on the weather decks of *Malaya*, *c*.1940–41. Note the 15in twin turret forward, the casemate 6in Mk XII secondary guns on the broadside, and the 4.5in Mk I dual-purpose guns in their twin turret at the bottom of the photograph. (The Print Collector/Print Collector/ Getty Images)

Taken in January 1938, this photograph shows the four forward 15in/42 Mk I guns of the Royal Sovereign-class battleship *Ramillies*. (Mirrorpix/Mirrorpix via Getty Images)

In peacetime, each ship of the fleet was manned by personnel from one of three home ports or 'manning divisions' based at Chatham in Kent, Portsmouth in Hampshire and Devonport (Plymouth) in Devon.

Ships were commissioned and sometimes sent to distant stations. In the case of the Mediterranean Fleet, ships were based at the fleet's main base at Malta. The base had well-developed facilities and the island provided for all the needs of the personnel on the ships based there. Because Malta was virtually undefended at the start of the naval war in the Mediterranean, the Mediterranean Fleet's primary base was moved to Alexandria in Egypt. Unlike Malta, Alexandria was not developed as a main base and had few repair or ammunition-storage facilities. Alexandria and nearby Cairo were not favoured by ships' crews as desirable locations for shore leave.

Ships remained in commission with the same crew for a prolonged period. If a ship was assigned to the Mediterranean Fleet, it was away from its home port for an extended period. If a ship was damaged or reached a point when an overhaul was required, it was usually returned to the United Kingdom where the crew could finally take some leave. When commissioned again, the ship would have a different crew, usually with a higher proportion of new and experienced personnel replacing the 'old hands' who had been transferred to other ships.

The quality of pre-war volunteers, who knew they were signing up for a life of hardship, was high because service in the Royal Navy was viewed as a prestigious career and during economically hard times, it offered secure employment. Pre-war volunteers signed up for a 12-year enlistment and started their service with the rank of ordinary seaman. Sea duty was arduous because Royal Navy ships were not designed with habitability in mind and could be assigned to overseas stations for years at a time.

Even after the start of World War II and the introduction of conscription, the Royal Navy was still imbued with a spirit of volunteerism. That was because conscripts were able to volunteer for service in the Royal Navy or Royal Air Force before ending up in

the Army. As a result, until 1943, the Royal Navy had three times the number of volunteers that it needed, allowing it to select the best personnel. Volunteers had to have good eyesight without glasses and have good teeth.

As an enlisted man gained service time, he became an able seaman, leading seaman, petty officer and finally chief petty officer. The best of these men had a rare combination of leadership skills and technical abilities. They were the link between the enlisted men and the ship's officers. A leading seaman was charged to lead – an important step on the way to petty officer – but lacked the authority of a petty officer. Petty officers were granted more authority and were given separate quarters. Chief petty officers had considerable experience having spent at least five years as a leading seaman and three years as a petty officer. They enjoyed their own quarters and mess and their distinct uniform enhanced their authority. A good chief petty officer was worth his weight in gold since he possessed demonstrated leadership skills and usually possessed an area of technical expertise.

THE REGIA MARINA

The quality of officers serving in the Regia Marina was generally high because most observers considered them well-trained and motivated. The Regia Marina's Accademia Navale di Livorno was established in 1881 and was the primary pipeline for non-specialist officers. The education was technically focused. Admission to the academy was restricted and was a primary factor in shaping the officer corps' conservative and monarchical outlook. Naval officers maintained a distance from Mussolini's Fascist regime.

There were issues with the officer corps, however. Lower-ranking officers displayed aggressiveness and some degree of initiative, but this was rarely shown at higher levels. Higher-ranking officers were beholden to doctrine and the orders of their superiors. In fact, initiative was discouraged at higher levels. Vizeadmiral Eberhard Weichold, the Kriegsmarine liaison officer in Rome during 1941–43, noted that any decision by a lower-ranking officer in the Regia Marina had to be submitted to the commander of the operation for approval. Another issue was the general shortage of officers: in the Regia Marina they made up only 5.4 per cent of personnel; in the Royal Navy the total was 9.2 per cent and the British also had a stronger non-commissioned officer corps.

In June 1940, the Regia Marina numbered 168,800 men – a marked growth from the force of 4,180 officers and 70,500 enlisted personnel before the start of mobilization in September 1939. The enlisted force was made up of a mix of volunteers serving four-year enlistments and conscripts who served for two years. At the start of the war, 53 per cent of the enlisted force was composed of volunteers. The quality of Regia Marina enlisted personnel was high compared to that of Italy's other two armed services, but there were real problems with the force. The biggest problem was the lack of technical expertise because Italy possessed a low literacy rate, a narrow educational system and a small industrial base. Running a modern warship was a complex business and the lack of qualified enlisted personnel was a handicap which shifted more of the technical burdens to the officer corps. Another problem was the social gap between officers and the enlisted force, which was a detriment to morale.

Ammiraglio d'Armata Ferdinando di Savoia, Duke of Genoa, decorates a sailor of the Regia Marina in Piazza San Marco, Venice, on 10 June 1942. (Mondadori Portfolio via Getty Images)

Whatever issues the enlisted force had, the Regia Marina fought well during the naval war in the Mediterranean. Wartime propaganda created by the Royal Navy depicted the Regia Marina as being afraid to fight and not technically proficient in modern naval war; but, as this book shows, the Italians were not afraid to fight, though the fleet was used with caution. Morale within the Regia Marina never cracked, even in the extreme example in April–May 1943 when light units escorted convoys to Axis forces in Tunisia through sea lanes so dangerous they were called the 'Route of Death'. It is important to note that as the Italian military disintegrated with the acceptance of the armistice agreed with the Allied powers in September 1943, the Regia Marina remained intact.

CONDITIONS OF SERVICE

THE ROYAL NAVY

Given the relatively small size of the Mediterranean Fleet and its broad operating area, the pace of operations was relentless, though less so for the battleships because they usually only put to sea as part of a major operation. The pace of operations meant officers and men were subjected to continual stress which dulled their reactions and reduced combat effectiveness. Early in the war, during the period covered by this book, combat fatigue was just beginning to be recognized as an issue. Despite the pressures of war, however, the morale of the Mediterranean Fleet remained high by all accounts. The only time when morale discernibly wavered was in May 1941, when the fleet was subjected to continual air attack during the evacuation of Commonwealth forces from Crete during 21 May–1 June. The tradition of success enjoyed by the Royal Navy helped the crews through difficult times and gave them a sense of superiority over the upstart Regia Marina.

ANDREW B. CUNNINGHAM

Andrew Browne Cunningham – known as 'ABC' – was born in Dublin in 1883 and graduated from Britannia Royal Naval College, Dartmouth in 1898. He rose quickly in rank, helped by his exploits at the Dardanelles as the commander of the destroyer *Scorpion* in World War I and in the Baltic Sea after the war when he commanded the destroyer *Seafire*. He continued his career in destroyers, taking command of destroyer flotillas in 1922 and 1923. After more education, Captain Cunningham assumed command of the battleship *Rodney* in 1930. In 1932, he gained flag rank and was appointed as commander of the Mediterranean Fleet's destroyers. At the start of World War II, he was a vice-admiral and commander of the Mediterranean Fleet. He immediately made sure the Mediterranean Fleet was at top readiness because he believed Italy would soon come into the war.

Expertise in manoeuvring warships and in night combat came into play during Cunningham's tenure as commander of the Mediterranean Fleet. He also displayed diplomatic ability by negotiating the surrender and internment of a French squadron in Alexandria harbour as opposed to the failed negotiations over the bulk of the French fleet based at Mers-el-Kébir in Algeria.

Cunningham was extremely aggressive with his fleet after the Italians entered the war. This and several statements made after major operations indicate that he held the Regia Marina in little regard. He was aggressive almost to the point of recklessness at the battle of Calabria, but the Regia Aeronautica was unable to spring the trap set by the Italians. Cunningham successfully orchestrated a number of convoys to Malta with few losses. At Cape Matapan, he finally got his battleships within range of a segment of the Italian battle fleet and inflicted a major defeat on the Regia Marina using his skill in night combat.

In the face of a new threat, the Luftwaffe, Cunningham, promoted to full admiral at the beginning of 1941, proved determined in the face of heavy losses. He kept the Mediterranean Fleet committed to the evacuation of Commonwealth forces from Crete during 21 May–1 June 1941 despite very heavy losses. He stated that stopping the evacuation was not an option given the Royal Navy's tradition of never backing down. Nevertheless, he was criticized for excessively exposing the Mediterranean Fleet to an aerial threat that he had no means to counter, and there is some validity in this criticism.

Cunningham left the Mediterranean Fleet briefly in late 1942 and early 1943 to command the naval forces conducting Operation *Torch*, the Allied invasion of Vichy North Africa. In February 1943, shortly after his promotion to Admiral of the Fleet, he returned to the Mediterranean Fleet and had the pleasure of seeing the tide turn in the Allies' favour with the final defeat of Axis forces in North Africa in May and the invasion of Sicily in July. On 11 September, he was at Malta to see the surrender of the Italian battle fleet. The next month, he left the Mediterranean to become First Sea Lord, a post he held until May 1946 after overseeing the post-war downsizing of the Royal Navy. Showered with awards and honours in the post-war years from both home and abroad, he died in 1963 and was buried at sea off Portsmouth.

Andrew Browne Cunningham, Commander-in-Chief of the Mediterranean Fleet during World War II, *c.*1940. (Elliott & Fry/Hulton Archive/Getty Images)

Each ship had its own character. Officers and men had intense loyalty to their ship, even though their posting would only be about two years under wartime conditions. Some ships were known as 'happy' ships and their crews exhibited extraordinarily high morale. By all accounts, the battleship *Warspite* was one such ship. The large crews aboard Royal Navy battleships meant that it took longer for the dilution of wartime expansion to be felt. During 1940–41, therefore, the Mediterranean Fleet's battleships were crewed by highly experienced and highly motivated crewmen.

A battleship was commanded by a captain with his executive officer holding the rank of commander. The captain concentrated on fighting the ship while the executive officer ran the ship. Each ship was run differently, but in general wartime discipline was relaxed, even on battleships which in peacetime stressed discipline and a 'spit and polish' attitude to even the most menial tasks. In addition to the top two officers, there were two gunnery officers, a torpedo officer (who handled electrical issues), and several non-specialist officers to run the ship's six divisions. Each 15in turret had its own officer during combat and the secondary battery was run by two or three officers. The anti-aircraft battery was also overseen by an officer. Four officers were assigned responsibility for fire control.

Life at sea was busy. Battleships had larger crews and favoured two watches meaning crewmen spent four hours on watch and four off. In their off time, the officers and men had to tend to their regular job and then find time to rest. Each ship had a watch and quarter bill which divided the crew into sections for any kind of activity the ship might undertake. There were separate bills for day action, night action and many other specific functions.

THE REGIA MARINA

As a matter of course, Italian ships spent less time at sea than their British counterparts; even less so for Regia Marina battleships because they were only used for major fleet operations. From the start of the naval war in the Mediterranean until the armistice in September 1943, Italian battleships spent only 153 days at sea. When an Italian battleship sortied, the ship was at sea for an average of only 1.6 days. Nevertheless, life aboard was arduous because Italian ships were designed for short-duration missions in the Central Mediterranean and thus did not make habitability a design priority.

As a general rule, Regia Marina training was scripted and focused on basic warfare skills. Because the battleship was the centrepiece of the fleet, exercises focused on gunnery drills. Battleships and heavy cruisers (the latter considered to be part of the battle line by the Italians) concentrated on long-range gunnery because this supported existing doctrine. Training was infrequent until 1939 when the pace picked up after war broke out. Increased training brought demonstrably better gunnery results, as was demonstrated at the start of the war when Italian long-range gunnery was generally accurate but suffered from the salvo-dispersion issue (see page 40). Anti-aircraft gunnery was hampered by a lack of ammunition, with the result that during the war Italian anti-aircraft fire was generally ineffective. However, pre-war training did focus on defending the fleet from torpedo-bomber attack and this contributed to the Regia Marina's demonstrated ability to evade aerial torpedoes during the war. A major area of weakness was the lack of night-fighting training. This and a lack of equipment for night fighting (primarily radar) dictated that the Regia Marina avoid night actions altogether.

ANGELO IACHINO

Iachino was the Regia Marina's most important command figure during World War II because he commanded the Italian battle fleet from December 1940 to April 1943. He was born in 1889 and graduated from the Accademia Navale di Livorno in 1907. In World War I, he was cited for gallantry aboard the torpedo boat *66 PN* in the northern Adriatic. After the war, he commanded the gunboat *Ermanno Carlotto* in Chinese waters. In the 1930s, he took command of the light cruiser *Armando Diaz*. Promoted to *ammiraglio di squadra* in 1939, he was in command of the 2ª Squadra and led it at the battle of Cape Spartivento on 27 November 1940. After the initial failures of the battle fleet to gain success, Iachino took over command on 9 December 1940.

Iachino promised to be more aggressive than his predecessor, and he was given more leeway by Supermarina. The change by Supermarina was minor, however, and Iachino was forced to labour under the continued restriction to only engage an inferior force. He criticized Supermarina for exercising too much control which he believed undermined his authority and crushed any initiative. Nevertheless, he demonstrated a desire to get at the British; but this was crippled by the continuing inability of the Regia Marina and Regia Aeronautica to work together and the persistent late and inaccurate scouting reports provide by Italian aviators. Iachino urged that he be allowed to conduct a raid into the Aegean Sea, an idea he later rejected as unsound. Even after Cape Matapan, he was as aggressive as his orders allowed, as demonstrated by the first and second battles of Sirte during which the Regia Marina could claim some measure of success on both occasions. Iachino's greatest success was during 11–16 June 1942 in what the Italians called the *Battaglia di mezzo giugno 1942* (Battle of mid-June 1942), during which he forced a British convoy bound for Malta to return to Alexandria.

In April 1943 Iachino was replaced by Ammiraglio di Squadra Carlo Bergamini, who led the Italian battle fleet to Malta under the terms of the armistice and was killed on his flagship *Roma* on 9 September 1943. Iachino did not retire until 1954. After the war he wrote several books on the Regia Marina's war in which he placed himself in the most favourable light possible. He died in 1975.

Ammiraglio di Squadra Angelo Iachino on the bridge of the heavy cruiser *Pola* during the battle of Cape Spartivento, 27 November 1940. When Iachino took over the fleet in December 1940 he faced the same difficulties as his predecessor, which precluded him from achieving a definitive victory against the British. However, in the context of overall Italian naval strategy, he did enjoy success against British convoys headed to Malta. (Mondadori Portfolio via Getty Images)

COMBAT

Despite only having two battleships operational at the start of the naval war in the Mediterranean, the Regia Marina was eager to seek an engagement with the Royal Navy. This came with strict conditions for fleet commander Ammiraglio di Squadra Inigo Campioni, however, because he was under orders to accept an engagement only under conditions in which he held a clear superiority. Cunningham was even more anxious for a fleet action and had no curbs on his aggressive nature. To draw the Italian fleet out, he used the Malta convoys as bait, and if this failed he was prepared to threaten the Italian mainland with attack which he was sure would force the Regia Marina to give action.

THE BATTLE OF CALABRIA

Known as the battle of Punta Stilo in Italy, the first major naval engagement of the war in the Mediterranean came on 9 July 1940, less than a month after Italy declared war on the United Kingdom and France. Like most battles in the Mediterranean, it was prompted by one or both sides moving a convoy through or into the Central Mediterranean. This was the case in July 1940 when a series of naval moves in the Central Mediterranean resulted in the largest naval battle of the entire war in the Mediterranean. On 6 July, a large (by Mediterranean standards) convoy of six ships under heavy escort left Naples and headed for Benghazi in Libya. The following day, both Regia Marina fleets departed from their bases in southern Italy to intercept a convoy that Italian intelligence believed was headed to Malta. The combined strength of the two fleets was impressive – two battleships (*Conte di Cavour* and *Giulio Cesare*), six heavy cruisers, ten light cruisers and 36 destroyers.

Conte di Cavour opens fire with its main battery during the battle of Calabria. This photograph was taken from aboard *Giulio Cesare*. (NH 86586 courtesy of the Naval History and Heritage Command)

On the same day the Italian fleets put to sea, Cunningham sortied from Alexandria with the Mediterranean Fleet. The British force consisted of the battleships *Warspite* (Cunningham's flagship), *Malaya* and *Royal Sovereign*, the aircraft carrier *Eagle*, five light cruisers and 16 destroyers. Italian intelligence was correct – there were indeed two convoys headed to Malta. Cunningham was at sea to cover the convoys' transit to Malta. The next day, two Italian Z.506 seaplanes operating from Tobruk in Libya confirmed that the Mediterranean Fleet had departed Alexandria. Meanwhile, Force H departed Gibraltar on 8 July with one battlecruiser, two battleships, one aircraft carrier, three light cruisers and 11 destroyers. This was only a diversion, however, as the Italians quickly discerned. Force H conducted an air strike on Cagliari on the island of Sardinia, and took no further part in the battle.

Both sides had a general idea of the movements of the other. Cunningham assessed that the two Regia Marina fleets were at sea to cover a convoy bound for Benghazi and placed the Mediterranean Fleet between the Libyan coast and the coastal city of Taranto in southern Italy. Meanwhile the Italians had firm knowledge of the movement of the Mediterranean Fleet. On the morning of 8 July, Regia Aeronautica bombers conducted several high-level bombing attacks on the Mediterranean Fleet. In what became a pattern, the bombers were generally accurate but only gained a single hit on the bridge of the light cruiser *Gloucester*. The Italian convoy reached its destination on the evening of 8 July. The two Regia Marina fleets, operating off the Libyan coast, knew Cunningham's location from a floatplane and changed course to intercept.

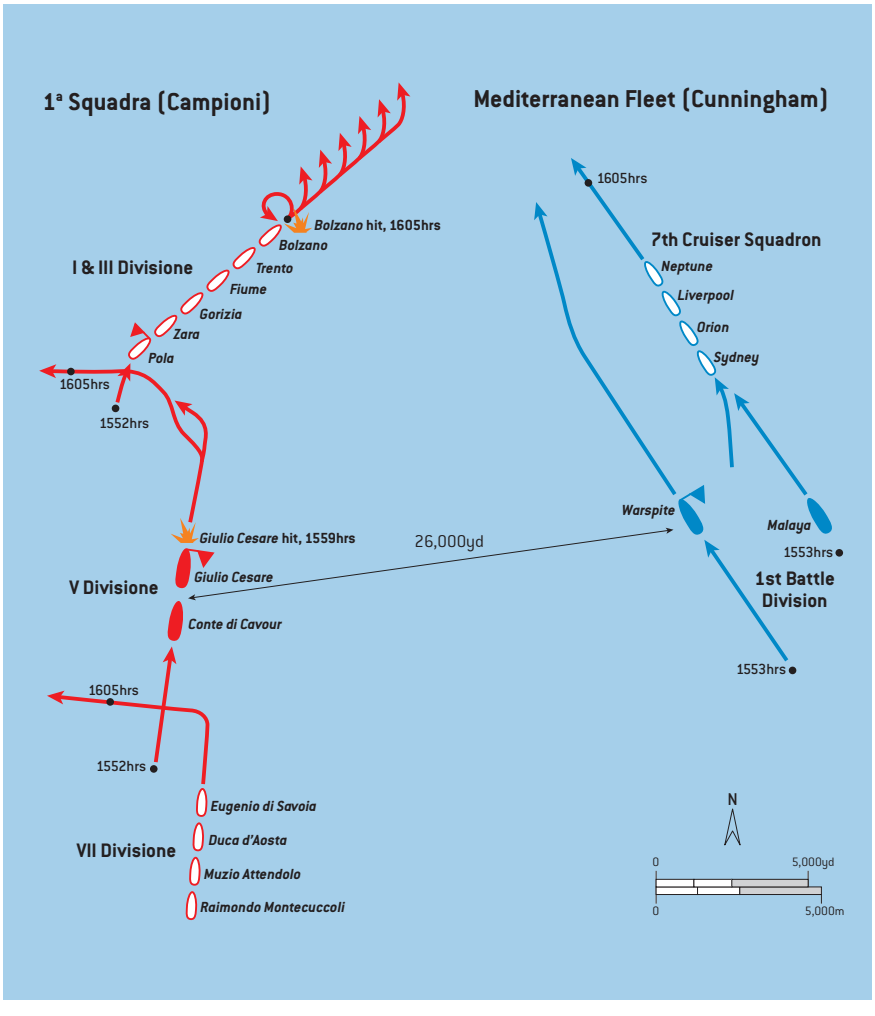
Giulio Cesare in action at the battle of Calabria. (Mondadori Portfolio via Getty Images)

At this point, Supermarina intervened. Italian intelligence had assessed that Cunningham was headed for the coast of Calabria by 1200hrs on 9 July, which led Mussolini to order that the Regia Marina postpone any engagement so that the Regia Aeronautica could bomb the Mediterranean Fleet all day on the 9th.

The Italian plan fell apart when the Regia Aeronautica bombers were unable to find the Mediterranean Fleet on the morning of the 9th. Early in the afternoon, nine Fleet Air Arm Swordfish torpedo bombers from *Eagle* mounted an attack on the Italian heavy cruisers but missed with all five torpedoes. The presence of the Swordfish alerted Campioni that the Mediterranean Fleet was nearby. After Ro.43 floatplanes launched from light cruisers located the British 80 miles to the north-east, Campioni changed course to intercept. *Conte di Cavour*, *Giulio Cesare* and the six heavy cruisers were arrayed in four columns with the two battleships in the middle. Campioni was under orders to delay the engagement to allow the Regia Aeronautica to attack, to engage the Mediterranean Fleet only if it was not concentrated, and to return his heavy ships to port when darkness fell.

Cunningham was anxious to accept battle even though his fleet was strung out in three separate formations. Four light cruisers and a destroyer (Force A) formed the advance force, followed by *Warspite* and five destroyers (Force B) 10 miles back. Behind them by another 10 miles were *Malaya*, *Royal Sovereign*, *Eagle* and ten destroyers (Force C). As the British ships steamed to the west to intercept, conditions were perfect with light seas, clear skies and high visibility.

As the range closed, the screening forces of both sides made contact. The British light cruisers reported smoke on the horizon at 1447hrs and contact on two heavy



The battle of Calabria, 9 July 1940.

cruisers at 28,000yd at 1452hrs. At 1508hrs, the light cruiser *Neptune* reported the two Italian battleships at 30,000yd. Italian light cruisers reported contact on the Mediterranean Fleet at 1505hrs.

After performing their mission of gaining contact on the Italian battle fleet, the British light cruisers headed to the north-east. At 1512hrs, with the Italian light cruisers in pursuit, the British light cruisers changed course to the west to engage. In a gun duel between the opposing light cruisers beginning at 1520hrs, both sides shot accurately, but only *Neptune* suffered light damage. At 1526hrs, *Warspite* intervened and the Italian light cruisers turned away. The British battleship failed to score a hit with 16 salvoes.

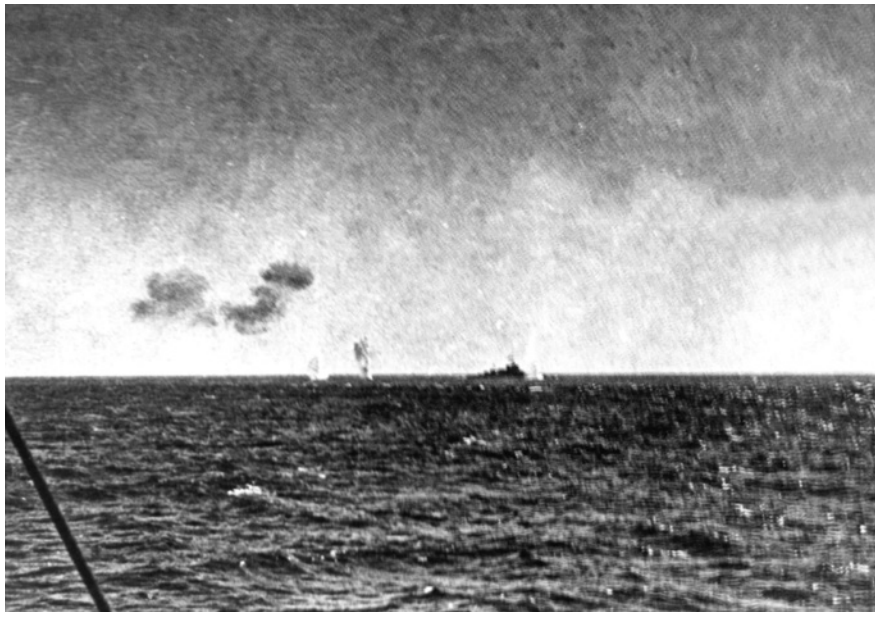
A lull ensued from 1536hrs to 1548hrs as Cunningham regrouped. *Warspite* was steaming to the north at 15kn. *Malaya* was 3,000yd to the east, but *Royal Sovereign* was 10,000yd away from the flagship. The two Italian battleships were steaming at 25kn to the north with the six heavy cruisers in advance. With his battle line formed, Campioni was ready to open fire. He ordered *Giulio Cesare* to engage *Warspite* and *Conte di Cavour* to target *Malaya*. The battleship duel began at 1552hrs when

Giulio Cesare opened fire at almost 29,000yd. Because Cunningham had allowed his force to become separated, only *Warspite* was in range, and the British battleship replied at 1553hrs from some 26,000yd. The chances of a hit at this range were very slim.

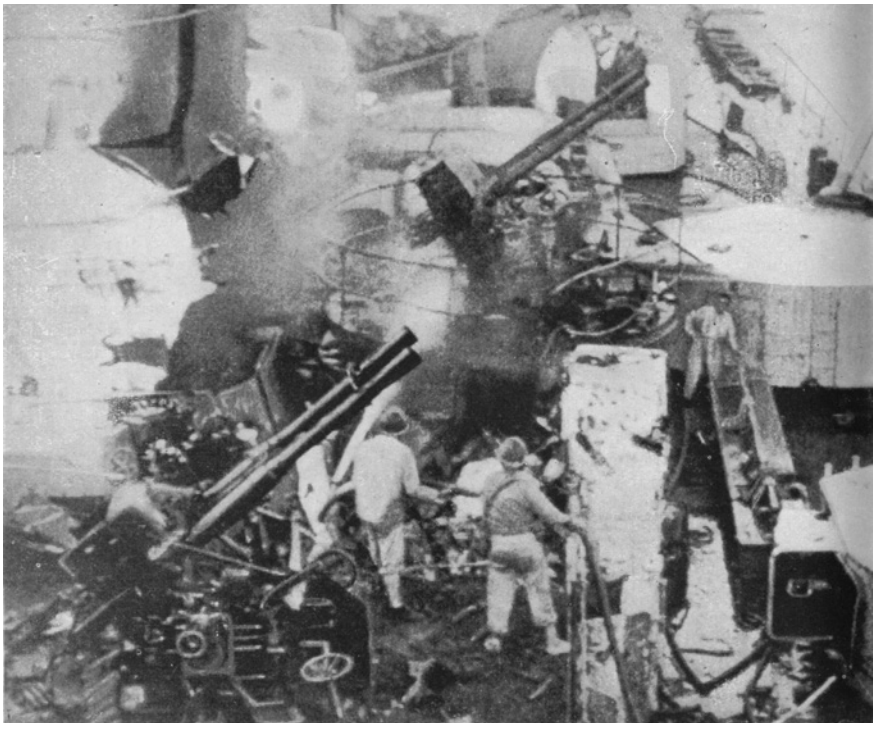
Both sides shot accurately, and at 1600hrs, *Warspite* was forced to change course after being bracketed by *Giulio Cesare*'s 12.6in shells. The Italian heavy cruisers briefly engaged *Warspite* at 28,000yd before shifting fire to the British light cruisers. At this point, the action was developing well for the Italians. *Giulio Cesare* was shooting well, and only one of Cunningham's battleships – *Warspite* – was within range. The Italian heavy cruisers held an advantage on the British light cruisers which were facing issues with ammunition supply. All this changed when a single 15in shell from *Warspite* hit *Giulio Cesare*'s aft stack. The shell failed to penetrate into the battleship's vitals, but it did cause a large fire and created a 20ft hole in the deck. Smoke was drawn into four boiler rooms which forced them off line, which in turn brought the battleship's speed down to 18kn within three minutes. With *Giulio Cesare* on fire and the degree of damage unclear, Campioni was forced to make a decision. Knowing that he now had only a single undamaged battleship against three British battleships, he made the only sensible decision possible and ordered his battle line to turn away to the west.

A single hit from 26,000yd – the longest hit ever recorded by a battleship – had decided the battle. *Giulio Cesare* fired a total of 74 rounds, and *Conte di Cavour* 41 before ceasing fire at 1608hrs. In the space of 11 minutes, *Warspite* fired 17 salvoes, ending at 1603hrs. *Malaya* fired only three salvoes at 1608hrs, and all fell short.

The Italian fleet withdrew under cover of their destroyers. Cruisers on both sides continued to fire, and at 1605hrs the Italian heavy cruiser *Bolzano* was hit by two 6in shells and near-missed by a third but remained in action. The Italian heavy cruisers stopped firing at 1620hrs after surviving an attack by nine Swordfish from *Eagle*.



This is *Warspite* at Calabria with a salvo of Italian 12.6in shells falling astern. The shells were fired from *Giulio Cesare* from ranges up to 29,000yd. (M. Brescia Collection)



The scene on *Giulio Cesare* immediately after the direct hit by a 15in shell fired from *Warspite*. The single 15in shell-hit looked worse than it was. This is the area of the aft stack on the starboard after the fire was extinguished. The shell created a large hole in the stack and a fire which created a large amount of smoke. This was sucked into four of the eight engine boiler rooms which resulted in an immediate loss of speed, forcing Campioni to break off the battle. It was also the only hit by one battleship on another during the entire naval war in the Mediterranean. (The Print Collector/Print Collector/ Getty Images)

Italian destroyers conducted four torpedo attacks to cover the withdrawal, scoring no hits, though the British reported several near-misses. British destroyers kept their distance and engaged in desultory gunnery attacks but fired no torpedoes.

The last phase of the action was almost comical. At 1645hrs, the first of the Regia Aeronautica bombers finally appeared. Seventy-six bombers attacked the Mediterranean Fleet, and another 50 mistakenly attacked Regia Marina ships. Fortunately for the Italians, none of their ships were hit. However, the efforts of the Regia Aeronautica were equally futile against Cunningham's ships. *Eagle* received the most attention but suffered only near-misses.

The battle of Calabria was indecisive, which probably explains why the action is so little known. No ships were sunk on either side and none was even heavily damaged. *Giulio Cesare* was back in action within weeks. The action has gone down as a British victory, and Cunningham declared in a report to the Admiralty in January 1941 that the action established a 'moral ascendancy' over the Italian fleet. In fact, the opposite was true. The Italians were heartened that they had engaged the Mediterranean Fleet and apparently performed well. Campioni was aggressive even to engage a superior force, and the action was only decided by a lucky hit at 26,000yd, as Cunningham himself admitted in his letter to the Admiralty. Campioni manoeuvred his force well and deserved better. He laid a trap for the British which the Regia Aeronautica bombers were unable to spring; and he manoeuvred his force well during the battle, keeping his battle line concentrated, and then was able to withdraw it safely. Cunningham's actions are hard to explain, and his force dispersion suggested that he held the Italians in little regard.

INTERLUDE BETWEEN FLEET ACTIONS

The issue of moral ascendancy was shown to be a myth when on 31 August 1940, the Italian battle fleet, now with four battleships, 13 cruisers and 39 destroyers, sortied to engage the Mediterranean Fleet which was at sea to escort a convoy to Malta. No contact was made when Cunningham passed up an opportunity to head straight for the Italian battle fleet and instead opted to sail south to provide direct support for the convoy. Campioni withdrew that evening in accordance with his orders from Supermarina to return to port if the Mediterranean Fleet was not located by dusk. Part of the British operation was to pass the battleship *Valiant*, aircraft carrier *Illustrious* and two anti-aircraft cruisers to the Mediterranean Fleet, thus providing Cunningham with a second modernized battleship.

On 7 September, the Italian battle fleet sortied again, this time to engage Force H which was reported to have left Gibraltar. The operation was entirely futile, however, because Force H headed into the Atlantic, not the Mediterranean. Most of the rest of September was quiet as the British mounted a major operation to seize Vichy-held Dakar in French West Africa. That operation too was a failure, and the battleship *Resolution* took a torpedo hit from the French submarine *Bévéziers* on the morning of the 24th. The battleship was heavily damaged, revealing the vulnerability of the Royal Sovereign-class ships to underwater damage. On 29 September, the Italian battle fleet with five battleships sortied again to strike British cruisers bound for Malta. This time, Campioni received no information from aerial reconnaissance and the interception duly failed.

With all six battleships operational, the Regia Marina possessed a clear edge over the Mediterranean Fleet. In response, Cunningham conceived a bold operation to reduce this advantage. On 11 November 1940, all six Italian battleships were riding at anchor at Taranto. The British used the opportunity to strike the Italian battle fleet with torpedoes launched by Swordfish from the aircraft carrier *Illustrious*. As part of a series of moves throughout the Mediterranean, *Illustrious* approached the heavily defended Regia Marina base and gained complete surprise. Attacking at night, the 20 Swordfish (only 12 of the aircraft were carrying torpedoes, 11 of which were launched) achieved remarkable results. Three Swordfish attacked *Conte di Cavour*, and one placed a torpedo abreast the forward superstructure. The battleship settled on the harbour bottom with its decks awash. Although re-floated eight months later, *Conte di Cavour* never returned to service. *Littorio* was attacked by four Swordfish and suffered a total of three torpedo hits; one abaft the forward turret, the second on the port quarter, and the third on the starboard bow which caused rapid flooding. Another torpedo struck *Littorio*'s stern but failed to explode. Despite this damage, the battleship was only out of action for four months. *Caio Duilio* was hit by a single torpedo which caused flooding in the forward magazine. The battleship was beached to prevent it from sinking but was returned to service by July 1941.

The raid on Taranto halved the number of operational Italian battleships available for operations. Both Churchill and Cunningham thought the shift in the naval balance was decisive, but again the Regia Marina displayed a determination to fight. This was shown only days later when on 17 November, the Italian battle fleet sortied with

OPPOSITE

This late summer 1940 overhead view of *Littorio* shows the placement of the quarterdeck-mounted aircraft catapult and the location of the four 6in/55 triple turrets and the starboard-side six 3.5in/50 single mounts. Note the broad red and white stripes on the forecastle, added after the battle of Calabria when 50 Regia Aeronautica bombers mistakenly attacked the Italian fleet. (M. Brescia Collection)

This is *Caio Duilio* on the morning of 12 November 1940 in Taranto harbour after being hit by a British aerial torpedo the night before. The torpedo hit forward and caused flooding in the forward magazine. The Italians beached the ship, then re-floated it, and returned it to service in six months. (M. Brescia Collection)

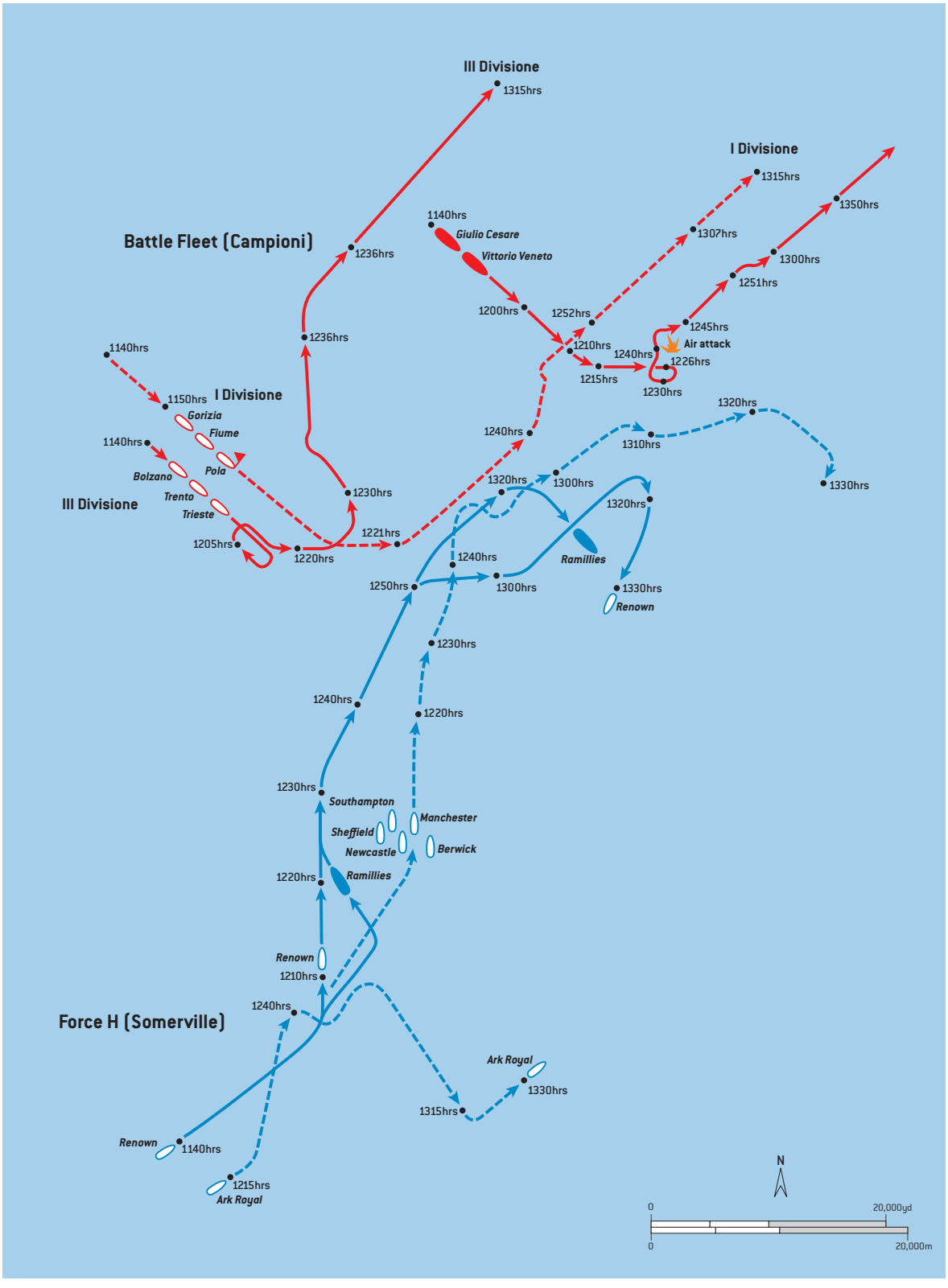
Vittorio Veneto and *Giulio Cesare*, escorted by six cruisers and 14 destroyers. The objective was to intercept an outnumbered Force H which was conducting a mission to fly 12 RAF Hurricane fighters to Malta. All 12 Hurricanes aboard the aircraft carrier *Argus* were launched early so that Force H could avoid contact with the Italian battle fleet. Eight of the Hurricanes ran out of fuel before they could reach Malta and were lost along with seven of their pilots.

THE BATTLE OF CAPE SPARTIVENTO

If any more proof was needed as to the resilience of the Regia Marina, it was provided later in November 1940 when the Italians again sortied to stop Force H from getting a convoy through to Malta. This resulted in the second battleship duel of the naval war in the Mediterranean, an engagement known as the battle Capo Teulada in Italy. The engagement was precipitated by another British operation to move convoys to Malta, one from Gibraltar and one from Alexandria. Campioni led the Italian battle fleet to sea on 26 November with a force built around *Vittorio Veneto* and *Giulio Cesare*, escorted by six heavy cruisers and 14 destroyers. The Italians decided to exploit their central position and attack the convoy headed from Gibraltar because it had a much weaker escort. This convoy was escorted by Force H with the battlecruiser *Renown*, the aircraft carrier *Ark Royal*, one heavy and two light cruisers and nine destroyers. Force H was reinforced by the battleship *Ramillies*, three light cruisers and five destroyers which were transferring out of the Mediterranean Fleet. These nine ships were scheduled to rendezvous with Force H at noon on 27 November south-east of Sardinia.

Campioni was in a quandary because his inclination was to be aggressive but his orders were clear that he could only engage an inferior force. He was also burdened by the requirement to get accurate and timely air-reconnaissance reports from the Regia Aeronautica. On the morning of 27 November, he was steaming to the south-east of Cape Spartivento, the southernmost point on the island of Sardinia, waiting for intelligence. The British were in three major groups to his south and south-west. Both Campioni and the commander of Force H, Vice-Admiral James Somerville, received

OPPOSITE
The battle of Cape Spartivento, 27 November 1940.


III Divisione
1315hrs
I Divisione
1315hrs
1350hrs
Battle Fleet (Campioni)
1140hrs
Giulio Cesare
Vittorio Veneto
1307hrs
1236hrs
1300hrs
1251hrs
1200hrs
1252hrs
1245hrs
Air attack
1140hrs
1210hrs
1240hrs
1226hrs
1215hrs
1230hrs
1236hrs
1150hrs
I Divisione
Gorizia
Fiume
1320hrs
1240hrs
1310hrs
1140hrs
Bolzano
Pola
1320hrs
1300hrs
1330hrs
Trento
Trieste
III Divisione
1230hrs
1320hrs
1221hrs
1205hrs
1220hrs
1240hrs
Ramillies
1250hrs
1300hrs
1330hrs
Renown
1230hrs
1240hrs
1220hrs
1230hrs
Southampton
Manchester
Sheffield
Newcastle
Berwick
1220hrs
Ramillies
Renown
1210hrs
1240hrs
Force H (Somerville)
Ark Royal
1330hrs
1315hrs
Renown
1140hrs
1215hrs
Ark Royal
N
0
20,000yd
0
20,000m

PREVIOUS PAGES
Ramillies was present at the indecisive action at Cape Spartivento but its slow speed prevented it from bringing its powerful 15in gun battery into action. The battleship fired only two ranging salvoes during the battle. In this view, *Ramillies* is trying to get into action with its top speed of 20kn. The two forward 15in/42 Mk I guns are fully elevated and have just fired a salvo.

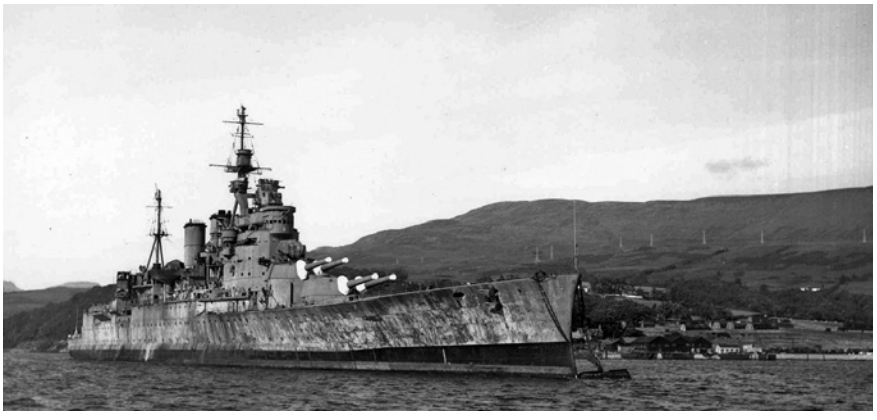
a series of confusing air-reconnaissance reports which prevented a clean interception by either side. Neither commander was even aware of the strength of the other. Campioni even ordered his heavy-cruiser commanders not to engage at all because he was sure he did not have the clear superiority that his orders required.

Despite orders, one of the Italian heavy-cruiser divisions opened fire at 1222hrs at the British cruisers. Even at the range of 23,500yd, they scored a hit on the heavy cruiser *Berwick* which caused a fire and killed seven men. The battlecruiser *Renown* joined the action at 1224hrs with two salvoes from its 15in/42 Mk I (N) guns which fell short. *Ramillies* also sent two ranging salvoes toward the Italian heavy cruisers, but these too fell far short. The Italian heavy cruisers headed north and until 1242hrs engaged in a running gunnery duel with the pursuing British. The accuracy of this fire was generally poor except for another hit on *Berwick* at 1235hrs. *Renown* raced north to support the British light cruisers and managed to fire eight salvoes at an Italian heavy cruiser at 1245hrs at the extreme range of 30,000yd. *Ramillies* struggled to keep up with its best speed of just over 20kn.

The Italian battleships were already headed back to base as Campioni had decided to break off the action. At 1240hrs, *Vittorio Veneto* came under attack from 11 Swordfish from *Ark Royal* but successfully evaded all ten torpedoes aimed at it. The Italian battleships were sighted by *Renown* at 1250hrs. Facing a superior force of two battleships, *Renown* turned south to join with *Ramillies* but soon resumed course to the north-east when it was apparent that the Italian battleships were withdrawing. *Vittorio Veneto* finally joined the action at 1300hrs when its aft 15in triple turret engaged the British light cruisers at 32,000yd. The light cruisers quickly turned to the south-east to seek the protection of *Renown*. *Vittorio Veneto* stopped firing at 1310hrs and the Italian fleet continued unimpeded to the north-east. The British ships broke off pursuit and returned to the convoy. After both sides survived ineffective air attacks in the afternoon, the action was over.

The battle of Cape Spartivento barely qualifies as a battleship duel. The entire action was fought at extremely long range and ended in indecision. The cruisers did most of the fighting with few rounds expended by the battleships: *Ramillies* fired only two ranging salvoes and *Renown* 16 salvoes; *Vittorio Veneto* fired 19 salvoes and scored no hits. Though he never knew it, Campioni had wasted an opportunity to inflict a potential defeat on a smaller British force. Given his orders and the conflicting and inaccurate air-reconnaissance reports, however, there was never a realistic chance that he could have engaged the British and fought the battle to a successful conclusion. Somerville was condemned for his lack of aggression by Churchill, but under the circumstances, fought an intelligent battle.

December 1940 saw a change in the Regia Marina's command structure. Ammiraglio d'Armata Domenico Cavagnari was replaced as chief of staff by Ammiraglio di Squadra Arturo Riccardi. Campioni, never able to bring the British to battle successfully, was given the job as deputy chief of staff. Ammiraglio di Squadra Iachino took over as fleet commander. As the Italians were sorting themselves out, Cunningham pressed his advantage to conduct a series of operations including a battleship bombardment of Valona (Vlorë) on the south-western coast of Albania, running two convoys from Alexandria to Malta, and moving the battleship *Malaya* through the Strait of Sicily to Gibraltar. The Italians were unable to interfere with any of these operations.



Renown, shown here laid up after the war, was a battlecruiser completed in September 1916. Extensively reconstructed during 1936–39, the ship often operated as part of Force H and saw service in the Mediterranean, playing a major role in the battle of Cape Spartivento on 27 November 1940. After its reconstruction, *Renown* was powerfully armed with six 15in/42 Mk I guns in three twin turrets and 20 4.5in Mk III dual-purpose guns in twin mountings, and possessed a top speed of 29kn but retained a light scale of protection.
(M. Brescia Collection)

The Regia Marina was reduced to a single operational battleship (*Vittorio Veneto*) when a Royal Air Force bombing raid damaged *Giulio Cesare* at Naples on 8 January 1941. With only *Vittorio Veneto* operational, the Regia Marina chose not to contest the movement of two Malta convoys with heavy units. Both convoys arrived safely at Malta but the British fleet came under heavy attack on 10–11 January 1941 from newly introduced Luftwaffe aircraft based on Sicily. *Warspite* was slightly damaged, *Illustrious* was heavily damaged but survived, and a light cruiser was sunk. Almost overnight, the Central Mediterranean became an extremely dangerous place for the Royal Navy.

In February, *Giulio Cesare* and *Andrea Doria* re-joined the fleet after the completion of repairs. On 9 February, Force H bombarded Genoa with *Malaya* and *Renown*. The Italian battle fleet was waiting south-west of Sardinia in expectation of another Malta convoy. When he learned of the bombardment, Iachino headed north to intercept the two British ships with all three of his operational battleships, three heavy cruisers and ten destroyers. Bad weather hampered Italian aerial reconnaissance, however, and *Malaya* and *Renown* escaped.

THE BATTLE OF CAPE MATAPAN

The entry of Germany into the war in the Mediterranean brought pressure on the Regia Marina to be more aggressive. Iachino had the same notion and proposed a sweep into the Eastern Mediterranean to the waters around Crete to interdict Allied convoys to Greece. Riccardi was sceptical of this scheme but was forced to agree to it when the Germans promised long-range fighter cover and effective aerial reconnaissance for the Italian fleet. The sweep was named Operation *Gaudo* and commenced on the evening of 26 March. Iachino's flagship was *Vittorio Veneto*, and a total of six heavy cruisers, two light cruisers and 14 destroyers were assigned to take part in the operation. The force was divided into two with the battleship, three heavy cruisers and seven destroyers conducting a sweep south-west of Crete and the remainder of the force to sweep in the Aegean Sea north of Crete. If nothing was detected by the morning of the 28th, the entire force would return to port.

Italian success was dependent upon retaining the element of surprise and receiving the effective air support promised by the Germans; but in the event, neither happened. The British received advance warning of the operation through the decryption of Enigma intercepts and made plans for a trap. Late on 27 March, Cunningham led the Mediterranean Fleet out of Alexandria with three battleships (*Warspite*, *Valiant* and *Barham*), one aircraft carrier (*Formidable*) and four destroyers. This force was joined by four light cruisers and four destroyers already in the Aegean Sea, and five more destroyers which later left from Alexandria. The British possessed a significant firepower edge over the Italian fleet and had the even more important advantage of air power aboard *Formidable*.

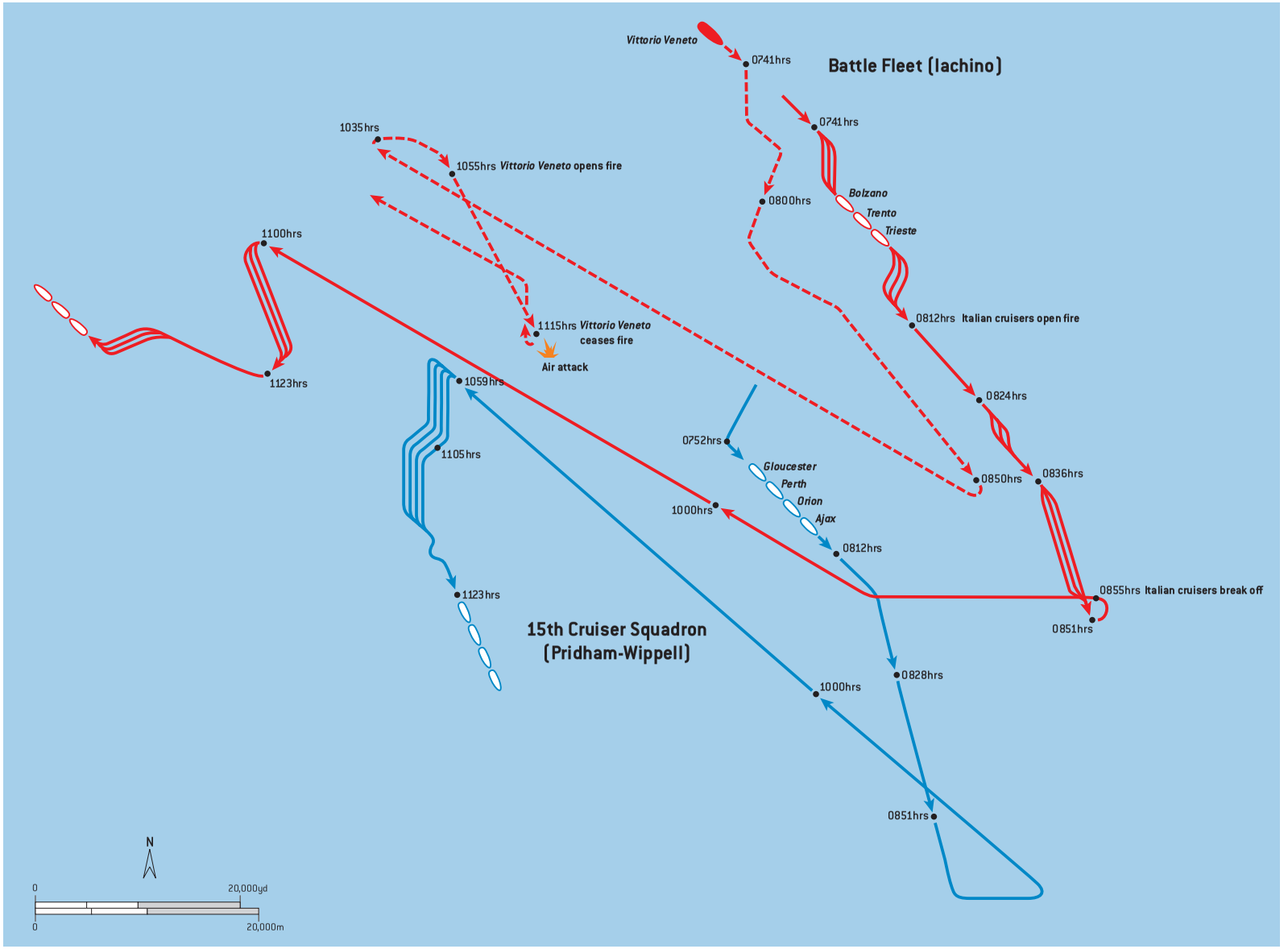
It only took until just after 1200hrs on 27 March for Operation *Gaudo* to start to unravel. The appearance of a Royal Air Force Sunderland maritime-patrol aircraft and decoding of the British contact report by the signals intelligence detachment on Iachino's flagship made it apparent that the Italians no longer possessed the element of surprise. Iachino declined to cancel the operation, however, because he received a report at 1400hrs that the Mediterranean Fleet was still in port and because it looked certain that the British had not detected the presence of *Vittorio Veneto*. He hoped to gain tactical surprise against the British cruiser force he knew was operating near Crete. Supermarina also decided to let the operation proceed but cancelled the sweep into the Aegean Sea.

On the morning of 28 March, Iachino was south of the westernmost part of Crete headed east. He decided to turn back at 0700hrs if nothing had been detected by then. His luck seemed to change when an Ro.43 floatplane from *Vittorio Veneto* spotted the British light-cruiser force heading south just 40 miles from the three heavy cruisers which were leading the Italian fleet. Iachino told his cruiser commander to gain contact and then fall back on *Vittorio Veneto* which was some 10 miles behind. This plan to get the battleship within range quickly fell apart when the cruiser commander gave chase to the British light cruisers, which had decided to run to the south-east where Cunningham's battleships were located.

The Italian heavy cruisers began a slow and deliberate fire at 0812hrs. From an extreme range of almost 26,000yd, and for the next 25 minutes, they failed to score with a total of 535 8in rounds. Iachino was worried that the heavy cruisers were getting themselves into a trap and ordered his cruiser commander to break off at 0855hrs. Cunningham had every intention of springing a trap, but his battleships struggled to get into range with their best speed of 22kn. When the Italian heavy cruisers broke off and headed west, it seemed the battle was over. Cunningham's last resort was to use *Formidable*'s torpedo bombers to strike the retreating Italian heavy cruisers and slow them down to allow the British battleships to finish off any damaged ships. By 1000hrs *Formidable* had launched six Albacore torpedo bombers to do just that.

As Cunningham struggled to get his heavy ships in range, Iachino made another attempt to get *Vittorio Veneto* into the battle. At 1035hrs, the battleship reversed course with the intention of getting behind the British light cruisers. This bid failed when the battleship stumbled into the British ships at 1055hrs. Quickly determining the ships were British, *Vittorio Veneto* opened fire at 25,000yd. The first ten salvoes were very close to *Orion*; the ship suffered splinter damage, but no shell hits. As the

OPPOSITE
The battle of Cape Matapan, 28–29 March 1941.


Vittorio Veneto
0741hrs
Battle Fleet (Iachino)
0741hrs
1035hrs
1055hrs Vittorio Veneto opens fire
0800hrs
Bolzano
Trento
Trieste
1100hrs
0812hrs Italian cruisers open fire
1115hrs Vittorio Veneto ceases fire
Air attack
1123hrs
1059hrs
0824hrs
0752hrs
1105hrs
Gloucester
Perth
Orion
Ajax
0850hrs
0836hrs
1000hrs
0812hrs
0855hrs Italian cruisers break off
0851hrs
1123hrs
15th Cruiser Squadron
(Pridham-Wippell)
0828hrs
1000hrs
0851hrs
N
0
20,000yd
0
20,000m

British light cruisers came under 15in gunfire, the three Italian heavy cruisers reappeared, forcing the British light cruisers to steam south-east. As the British light cruisers ran to the south-east and the safety of Cunningham's battleships, *Gloucester* was exposed to *Vittorio Veneto*'s gunners. Again, the battleship opened fire. According to a British aerial observer, the fire was accurate, even straddling the ship several times, but the salvo dispersion was too great to ensure a hit. *Gloucester* disappeared behind a smokescreen undamaged.

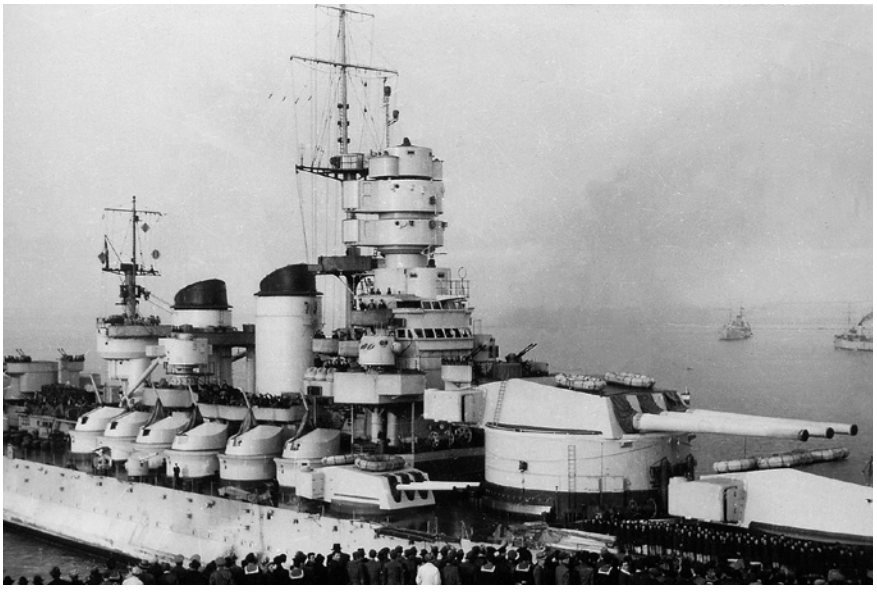
At 1115hrs, the slow Albacore torpedo bombers caught up with *Vittorio Veneto* and gained the proper position to attack. Iachino ordered *Vittorio Veneto* to cease fire and turn hard to starboard to evade the aerial torpedoes. This manoeuvre was successful, and all of the torpedoes missed. With this, Iachino decided to break off the action and ordered his fleet back to port. Though Iachino was unaware of it, Cunningham's battleships were only 45 miles away. With the superior speed of the Italian battleships, Iachino looked like a good bet to escape unharmed.

The only way the battle would resume was if British torpedo bombers succeeded in hitting an Italian ship and forcing it to slow down. To make this happen, the British conducted eight air attacks on the retreating Italian fleet from 1205hrs to 1950hrs. Five of these attacks were conducted by Royal Air Force Blenheim bombers; dropping from high altitude, they were unsuccessful. A small Swordfish strike from Crete also missed. However, the two strikes launched from *Formidable* changed the battle. The first at 1510hrs was directed at *Vittorio Veneto*. Of the five Albacore attacking, one placed a torpedo on the port side aft. The portside shafts were disabled, and the ship came to a temporary stop. Severe flooding ensued. Using its remaining two screws, the battleship got under way and attained 19kn. The second strike was conducted by six Albacore and four Swordfish during 1930–1950hrs as darkness fell. By now, the other three heavy cruisers from the abortive Aegean sweep had joined the Italian fleet. *Vittorio Veneto* was not hit again, but newly joined *Pola* was forced to reduce speed dramatically to avoid a collision. The heavy cruiser was hit by a torpedo which knocked out most of its boilers and the main steam line and soon drifted to a stop.

As darkness fell, neither commander had a clear grasp of the situation. Iachino was the most confused because he still had no idea that Cunningham's battleships were so close. When Iachino learned of *Pola*'s condition, he sent the other two heavy cruisers of its division to assist the stricken vessel. Iachino admitted later that if he had known anything larger than a British light cruiser was in the area, he would have ordered *Pola* scuttled. The stricken *Pola* was soon detected by radar carried on the British light cruisers. Cunningham's battleships changed course for the reported contact and the light cruisers continued to the north-west to look for the rest of the Italian fleet.

In the darkness, the radar aboard *Valiant* located *Pola* at 2210hrs some 6 miles to the south-west. Even with radar, the British were surprised when the Italian rescue force composed of the heavy cruisers *Zara* and *Fiume*, in a line ahead with four destroyers, appeared off the starboard bow of *Warspite* at 2245hrs. Cunningham immediately ordered his battleships to turn to starboard to form a column and to bring their aft turrets to bear.

The British battleships were only 3,000–4,000yd away from the surprised Italians. The two Italian heavy cruisers had their turrets trained fore and aft. With the help of radar and searchlights, the three British battleships opened fire. The range was point-



This photograph shows *Vittorio Veneto* headed into the dockyard at Taranto on 1 April 1941 after being damaged by a British aerial torpedo on 28 March during the battle of Cape Matapan. It is also an excellent close-up of the main, secondary and anti-aircraft batteries. Note the two rotating rangefinders on the bridge tower for the main battery. (M. Brescia Collection)

blank for a 15in naval gun and the initial salvoes hit their targets. *Warspite*, the lead British battleship, targeted *Fiume* which was only 3,800yd away. Observers aboard *Warspite* stated that of the six shells of the first salvo, five hit the target. A total of 14 15in shells and 16 6in shells were fired at *Fiume*. Observing the devastation aboard the Italian heavy cruiser, *Warspite* shifted fire to the next heavy cruiser in line, *Zara*, and fired four 15in salvoes at it. *Valiant* was the second battleship in line; it also selected *Fiume* for its opening salvoes and then shifted to *Zara* for the next five salvoes. The third ship in line, *Barham*, fired at *Zara* from only 3,100yd away with several 15in shells observed to hit. The four Italian destroyers in column behind the heavy cruisers did not escape the attentions of the British. The first destroyer, *Vittorio Alfieri*, was hit and brought to a stop; the third destroyer, *Giosué Carducci*, was also struck repeatedly by the secondary batteries of the British battleships and the 4.7in guns of the escorting British destroyers. After about seven minutes, the guns of the British battleships fell silent and minutes later Cunningham ordered them to withdraw to avoid any friendly-fire incidents. The order was confusing, however, and the British light cruisers which were closing on Iachino's main body also turned back. This essentially brought the battle to an end.

The three Italian heavy cruisers, crippled by gunfire, sank of their own accord or were finished off by the British destroyers. *Fiume* went down at 2330hrs with the loss of 812 men, followed by *Zara* (sunk by a torpedo) at 0240hrs the following morning with another 783 men. The drifting *Pola* was found by British destroyers which took off part of the crew and then scuttled the heavy cruiser at 0400hrs with torpedoes with the loss of a further 328 men. The two destroyers that sank cost the lives of another 380 men.

The only good news for the Italians was the escape of the damaged *Vittorio Veneto*. As the three Italian heavy cruisers were being obliterated, *Vittorio Veneto* was some 40 miles to the west. Cunningham declined to be reckless and decided not to pursue the battleship in the face of potential air attack from Luftwaffe and Regia Aeronautica aircraft. The boldest Regia Marina naval operation of the war had ended in disaster for the Italians.

ANALYSIS

The role of the battleship in the naval war in the Mediterranean was overstated by both sides before the conflict began. The key area of contention was the Central Mediterranean. During 1940–41, after the initial engagement at Calabria when both sides were anxious for a clash, there were few occasions on which both sides had battleships in the Central Mediterranean at the same time.

Throughout the war, Force H was extremely active attacking targets on Sardinia and the Italian mainland, escorting convoys to Malta and ferrying fighter aircraft to Malta from aircraft carriers. Because Force H was usually weaker in battleships than the Mediterranean Fleet, the Italians often preferred to sortie against it rather than take on Cunningham's fleet. On several occasions, the Italian fleet had a marked firepower advantage against Force H, but a lack of effective aerial reconnaissance prevented the Italians from making contact on all but one occasion. Later in the war, convoys coming from Gibraltar were given heavy escorts of Nelson-class and King George V-class battleships which the Italians declined to engage.

Based simply on the number of occasions that its battle fleet sortied, the Regia Marina was not afraid to engage the Royal Navy. Strategically, the Italian battle fleet was employed very conservatively because it rarely ventured beyond the Central Mediterranean. Operationally, the battle fleet was employed aggressively, as the Italians sortied whenever it had a chance to engage the British. On the *tactical* level, the Italians were timid. This was due to several factors including standing orders to engage only an inferior force and their doctrine of conducting long-range gunnery duels. This translated into indecisive actions. Another crippling factor for Italian battle-fleet commanders was their having to function under a system in which effective naval–air cooperation was all but impossible. The lack of effective aerial reconnaissance was a limiting factor and, on several occasions, prevented the Regia Marina from translating

Taken from the aircraft carrier *Argus* during Force H operations in the Mediterranean in March 1942, this photograph shows Spitfires ranged on the deck of the aircraft carrier *Eagle*, with the battleship *Malaya* in the background. (Lt. J.G. Marshall/ Imperial War Museums via Getty Images)

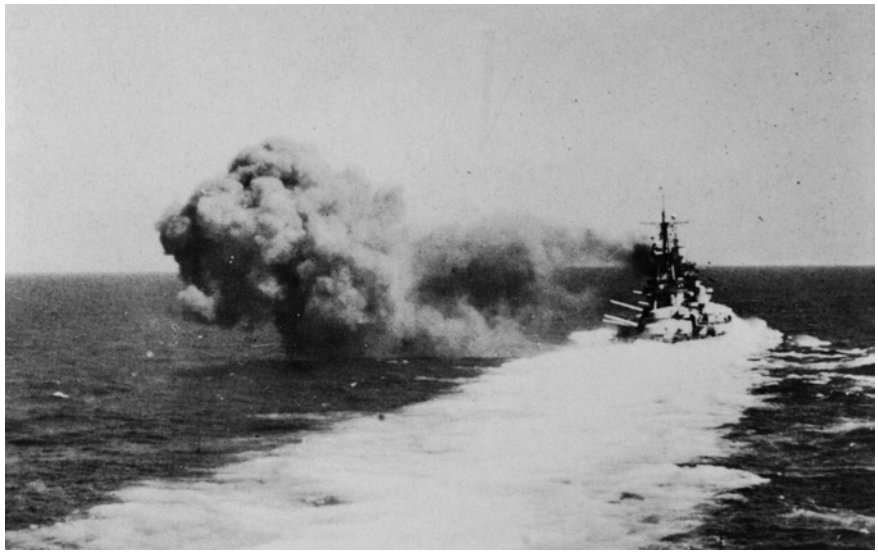
a numerical advantage into a potentially favourable tactical situation. On top of these difficulties, Italian battleships were vulnerable to air attack because land-based fighter cover was rarely delivered and their own anti-aircraft capabilities were relatively weak. The lack of shipborne radar precluded any consideration of a night engagement. Lastly, the effectiveness of Italian battleship gunnery was adversely impacted by the salvo-dispersion issue which virtually nullified the Regia Marina's most powerful weapons.

Within this framework, Italian battleships were a crucial component in what was a largely successful war waged by the Regia Marina. The Italians were able to achieve their dual primary objectives of keeping the sea lanes to Libya and the Balkans open until May 1943 while simultaneously denying the Central Mediterranean to Allied shipping until July 1943. This success is confirmed by the numbers: 98 per cent of Axis personnel were delivered safely to ports in North Africa and the Balkans together with 90 per cent of matériel.

THE BATTLES

It speaks volumes about the limited utility of battleships in the naval war in the Mediterranean that British and Italian battleships only fired at each other on one occasion during the entire conflict. This occurred at the battle of Calabria when both sides were itching for a major fleet action and before each side understood the nature of naval warfare in the Mediterranean. This action, like all three instances during which both sides had a battleship present in the same engagement, ended indecisively. The action was fought at very long range due to the Italian preference not to close to shorter range and the inability of the slower British battleships to force an action at shorter range. The action was decided by a single hit on *Giulio Cesare* delivered by *Warspite* at the improbable range of 26,000yd – the longest hit ever recorded by a battleship. The damage to the Italian battleship was not significant, but it prompted the Italian commander to break off the action.

The battle of Cape Spartivento was also fought at long range and was similarly indecisive. Despite the presence of three battleships and a battlecruiser, on no occasion



Giulio Cesare in action at the battle of Calabria, 9 July 1940. (DeAgostini/A. DAGLI ORTI/ Getty Images)

did a capital ship of one side fire on that of the opposing side. Again, the reason for this was the inability of the Italians to find the main British force and their unwillingness to close for an engagement if contact was gained. Just the presence of a slow Royal Sovereign-class battleship, which hardly played any part in the battle, encouraged the Italians to break off because it prevented them from having a superior force.

The battle of Cape Matapan ('Actions off Gavdos and Matapan' to the Italians) was the only major engagement of the naval war in the Mediterranean in which a battle was fought to a conclusion. It was also one of the few times when the British had a marked advantage in battleships, though the Italian commander remained unaware of this disturbing reality. *Vittorio Veneto* was brought into position to maul a British light-cruiser force but was failed by its inferior gunnery. Even though the Italian battleship was hit by an aerial torpedo which reduced its speed, the British were unable to bring their three Queen Elizabeth-class battleships within range. If they had been able to do so, it would have provided the only occasion on which the finest Regia Marina battleship faced the Mediterranean Fleet's most powerful battleship.

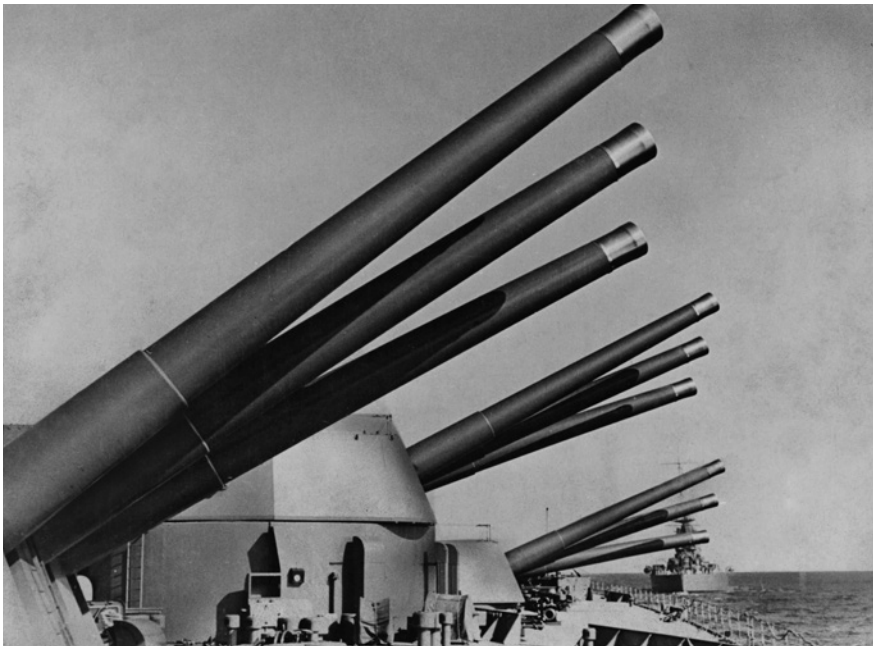
EVALUATING THE BATTLESHIPS

The Royal Navy was forced to go to war against the Regia Marina with a battle line composed of ships built before or during World War I. The backbone of the Mediterranean Fleet was provided by the Queen Elizabeth-class battleships. The British were confident that these ships were an overmatch to the older Italian battleships. To ensure this was the case, the three most modernized ships of the class – *Warspite*, *Queen Elizabeth* and *Valiant* – were deployed to the Mediterranean. The two ships of the class which received minimal modernization, *Barham* and *Malaya*, were also deployed to the Mediterranean at various points. These battleships were much superior to the older Italian battleships in terms of protection and firepower.

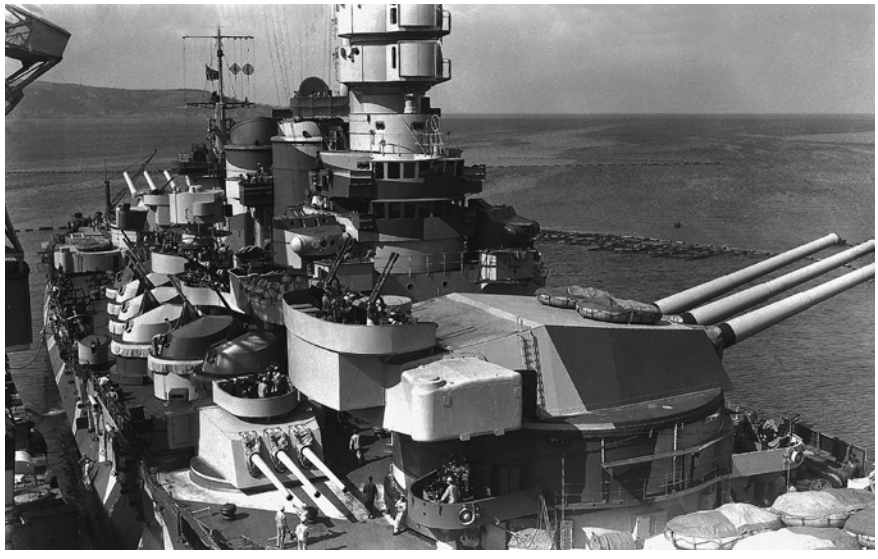
The 15in/42 Mk I gun was an accurate weapon, as demonstrated at the battle of Calabria, and possessed superior hitting power with its 1,938lb shell. In terms of protection, the Queen Elizabeth class was immune to penetration by the 12.6in/44 gun of the older Italian battleships at almost all ranges. The British battleships were vulnerable to underwater damage, as shown by the loss of *Barham*, but this was an issue shared by almost all battleships modernized between the wars. *Barham* was hit by three torpedoes, which would have overwhelmed the underwater protection of almost any battleship of the period.

The Royal Sovereign-class battleships played a subsidiary role in the early stages of the naval war in the Mediterranean. While they possessed the same firepower as the Queen Elizabeth class, protection, particularly underwater protection, was weaker. The key issue with both the Queen Elizabeth-class and Royal Sovereign-class battleships was their lack of speed: their superior firepower was useless unless it could be brought to bear. For the Royal Sovereign-class battleships, their lack of speed was crippling and relegated them almost always to secondary operations. On the two occasions in the Mediterranean when a battleship of this class had an opportunity to engage the Italians, their slow speed left them unable to play anything but a minimal role.

When the Vittorio Veneto-class battleships entered service, the British lost their quantitative advantage. While the Queen Elizabeth-class battleships were roughly equal in terms of firepower and protection, the new Italian battleships retained a marked speed advantage which would have allowed the Italians to dictate the terms on which any engagement was fought and whether it was fought at all. This was especially important because the Italians were reluctant to engage British battleships and the British battle line lacked the speed to force or sustain any engagement. In a gunnery duel between a modernized Queen Elizabeth-class battleship and a Vittorio Veneto-class battleship, the quality of the fire-control system would have been key,



The barrels of the main armament of nine 16in/45 Mk I guns mounted in triple turrets on *Rodney* are elevated while the battleship was serving as flagship of the 2nd Battle Squadron on 1 February 1939, somewhere in the Mediterranean. (FPG/Archive Photos/ Getty Images)



This is the No. 2 15in triple turret on *Roma* in spring 1942. The 15in/50 gun possessed an excellent range of over 46,000yd but suffered from an excessive salvo-dispersion problem which made it ineffective. (M. Brescia Collection)

with the British holding the edge. Italian battleship gunnery was accurate, but actually hitting a target never occurred due to the salvo-dispersion issue.

It is difficult to defend the Regia Marina's decision to reconstruct the four older battleships given Italy's limited construction funds and shipyard resources. While the rationale to rebuild the two Conte di Cavour-class battleships was understandable as it provided some stop-gap capability until the arrival of the Vittorio Veneto class, the decision to expend similar resources to rebuild the two Caio Duilio-class battleships was nonsensical because it actually delayed the arrival of the new battleships. Even after the four old battleships were rebuilt, the result was four battleships with limited firepower and questionable protection. Against the modernized Queen Elizabeth class, their 12.6in/44 guns had limited penetrating power with their 1,155lb shells and they did not possess sufficient protection to defeat 15in shells at almost all battle ranges. The four battleships did have the speed to disengage from all the older British battleships, however. All factors being taken into account, the rebuilt Italian battleships were of very limited worth during the naval war in the Mediterranean.

On the other hand, the two Vittorio Veneto-class battleships possessed a good combination of firepower, speed and protection and generally performed well in service. However, they did have weaknesses. Protection remained an issue, particularly against underwater threats. The Pugliese system proved generally successful against torpedoes, but against non-contact explosions it failed. The biggest weakness in the Vittorio Veneto-class battleships was their horizontal protection, which proved to be a direct factor in the loss of *Roma*. The deck-armour layout was inefficient because it was composed of two primary armoured decks.

The protection problems were exacerbated by inadequate damage-control equipment. Flooding control was a problem because the two pump rooms were located outside the armoured citadel and thus were vulnerable. Combined with the lack of portable power-driven pumps, the ships were vulnerable to flooding. This was demonstrated at Cape Matapan when the single aerial torpedo which hit *Vittorio Veneto* almost led to the ship's loss due to progressive flooding.

AFTERMATH

The battle of Cape Matapan ended in disaster for the Regia Marina, but it had little impact on the struggle for control of the Mediterranean. Cunningham used the opportunity immediately following the battle to deploy three battleships to bombard Tripoli harbour on 21 April 1941. The next month, Force H and the Mediterranean Fleet joined to protect a convoy loaded with tanks for British forces in Egypt. *Queen Elizabeth* also joined Cunningham's fleet at this time.

The reinforced Mediterranean Fleet took a severe pummelling during the withdrawal of Commonwealth forces from Crete during 21 May–1 June 1941. Among other ships, *Warspite*, *Barham*, *Valiant* and *Formidable* were damaged and three light cruisers sunk by German battleships. The Italian battle fleet did not intervene.

In the summer and autumn of 1941, attention turned to the convoy war in the Central Mediterranean. With the help of better intelligence, and naval and air forces

The only appearance of a King George V-class battleship in the Mediterranean during 1941 was when *Prince of Wales* supported the movement of a convoy from Gibraltar to Malta in September. (M. Brescia Collection)

Following the damage inflicted upon the battleship by Italian manned torpedo craft at Alexandria on 19 December 1941, *Queen Elizabeth* did not return to service until June 1943. This photo shows the battleship leaving Norfolk, Virginia after repairs and modernization. *Queen Elizabeth* and *Valiant* were reconstructed to the same configuration, as is evident in this view. (80-G-411679 courtesy of the Naval History and Heritage Command)

based at Malta, the British took an increasing toll on Axis convoys. During July–December 1941, Axis shipments to North Africa dropped from 94 per cent of cargoes reaching their destination during the first half of the year to 73 per cent. Meanwhile, the Italian battle fleet gained a marked edge over the Mediterranean Fleet when *Vittorio Veneto* returned to full operational service by August 1941, joining *Littorio*, *Andrea Doria*, *Caio Duilio* and *Giulio Cesare*. Supermarina wanted to make the most of this advantage and decided to attack Force H.

Even as they took an increasing toll on Italian convoys headed to North Africa, the British also had to keep Malta supplied. A convoy from Gibraltar got through to Malta in July 1941, escorted by *Nelson*, *Renown* and the aircraft carrier *Ark Royal*. On 23 August, *Vittorio Veneto* and *Littorio*, four heavy cruisers and 19 destroyers sortied to intercept Force H on a mining mission off Livorno. The Italians waited south of Sardinia but failed to make contact. In September 1941, the Italian battle fleet got another chance to attack Force H and a convoy bound for Malta. The large nine-ship convoy left Gibraltar on 24 September under escort of *Nelson*, *Rodney* and *Prince of Wales*. The Italian battle fleet with *Vittorio Veneto* and *Littorio*, five heavy cruisers and 14 destroyers put to sea on 26 September under the same orders to avoid action unless an inferior enemy force was encountered. Despite getting to within 40 miles of the British force, confusing Italian aerial reconnaissance left Iachino with no option but to decide not to engage.

In December 1941, Italian battleships were committed to provide direct support for Axis convoys headed to Libya. After the recall of one convoy, *Vittorio Veneto* was torpedoed on 14 December by the British submarine *Urge* in the Strait of Messina. That one hit caused extensive flooding and repairs to *Vittorio Veneto* were not completed until June 1942. The next convoy was allocated *Caio Duilio* in direct support with *Littorio*, *Andrea Doria* and *Giulio Cesare* providing distant support. Concurrently, the British mounted a convoy operation from Alexandria to Malta. The British convoy was spotted by Italian aircraft and the Regia Marina's distant covering force was sent to engage it in what came to be known as the first battle of Sirte. After the usual confusion with air-reconnaissance reports, and wishing to avoid a night action, Iachino, the Italian commander, did not engage the British convoy's escort

until the evening of 17 December when he opened fire from 35,000yd with *Littorio*'s 15in/50 guns. Darkness brought the action to a close with neither side having suffered major damage. The first battle of Sirte must be seen as an Italian victory because the Axis convoy reached its destinations safely.

The Mediterranean Fleet's battle line suffered heavily in late 1941. On 25 November *Barham* was torpedoed by *U-331* with the loss of 861 men. An even heavier blow was inflicted by Italian manned torpedo craft in the shallow waters of Alexandria harbour on 19 December. Both *Queen Elizabeth* and *Valiant* were placed out of action for a prolonged period by mines deployed by Italian frogmen operating the manned torpedo craft, leaving the Mediterranean Fleet with nothing larger than a light cruiser.

In March 1942 the British were forced to mount a major operation to relieve Malta. In the second battle of Sirte, fought on 21 March, *Littorio*, three heavy cruisers and eight destroyers were dispatched to intercept the convoy. In the resulting action, fought under storm conditions and in poor light, *Littorio* fired 181 rounds of 15in shells. The Italians aggressively attempted to engage the convoy which forced it to the south and eventually to scatter in an attempt to reach Malta singly. This exposed the ships of the convoy to air attack the next day. Ultimately, only a small fraction of the convoy's cargo was salvaged, making the second battle of Sirte a victory for the Regia Marina.

Vittorio Veneto returned to service in early 1942 and *Roma* began trials in the summer. The situation on Malta was increasingly desperate so in June the British mounted the largest operation to date to relieve the island. A six-ship convoy headed for Malta from Gibraltar while another convoy of 11 ships departed Alexandria. The Italians correctly assessed the Alexandria convoy as the main effort. On 14 June, *Vittorio Veneto*, *Littorio*, four heavy cruisers and 12 destroyers departed to attack. The two battleships came under heavy air attack the following day. *Littorio* took a bomb on its forward turret which caused no significant damage, but a Royal Air Force Beaufort torpedo bomber hit the battleship which caused it to return to port after severe flooding. Even against a single Italian battleship, the British convoy was forced

Valiant leads the Italian battle fleet into Malta on 10 September 1943 under the terms of the Italian Armistice. The scene is framed by the after 15in/42 Mk I guns of *Warspite*. (SC 188574 courtesy of the Naval History and Heritage Command)

Italia and *Vittorio Veneto* off Malta after the Italian armistice. After being surrendered in September 1943, *Vittorio Veneto* and *Italia* did not return to Italy until 1947 and were decommissioned in 1948. The Italians resisted scrapping them and they were not broken up until 1951–55. (NH 111459 courtesy of the Naval History and Heritage Command)

to return to Alexandria because the convoy escort was outgunned. The mere presence of an Italian battleship had gained a major victory for the Axis.

By mid-1942, the Regia Marina faced a severe fuel-oil shortage which sharply curtailed battleship operations. Accordingly, the climactic convoy battle in August 1942 prompted by a massive British relief of Malta faced only the threat of Regia Marina heavy cruisers. The fuel crisis left only the three modern Italian battleships operational. The three older battleships were placed in reserve.

The Regia Marina's battleships spent the rest of the war going from port to port to avoid air attack. *Littorio*, *Vittorio Veneto* and *Roma* were all hit but when Allied forces began to land on Sicily on 9–10 July 1943, *Vittorio Veneto* and *Littorio* were available, though they made no attempt to attack the landing force. Such an operation would have been suicidal against a British force of six battleships and two aircraft carriers.

On 25 July 1943, Mussolini's regime fell and the new Italian government concluded an armistice with the Allied powers on 3 September 1943. The Italian battle fleet was held in reserve as a bargaining chip during the armistice negotiations.

Following the announcement of the armistice, the Regia Marina was ordered to transfer its battle fleet to Allied-controlled ports. In the course of doing so, the battle fleet was attacked by Luftwaffe Do 217 bombers carrying Fritz X radio-controlled anti-shipping glide bombs off Sardinia on 9 September. *Roma*'s short career came to a tragic end. The first of two glide bombs hit the starboard side and penetrated the Pugliese system to explode under the hull. A second glide bomb probably entered the forward engine room and the resulting fires spread to the forward magazine which exploded. The ship capsized and broke in two, taking 1,253 men to their deaths. *Italia* (*Littorio*'s new name after the fall of Mussolini's regime) was also hit by a single glide bomb, but the damage was minor. *Italia* and *Vittorio Veneto* reached Malta and were escorted into port by a British force which included *Warspite* and *Valiant*. *Andrea Doria*, *Caio Duilio* and *Giulio Cesare* also reached Malta, meaning that five of the Regia Marina's seven battleships survived the war in an operational status.

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Editor's note
In most cases imperial measurements, including nautical miles (NM), knots (kn) and long tons, have been used in this book. For ease of comparison please refer to the following conversion table:

1 NM = 1.85km
1yd = 0.9m
1ft = 0.3m
1in = 2.54cm/25.4mm
1kn = 1.85km/h
1 long ton = 1.02 metric tonnes
1lb = 0.45kg

Front cover, above: At the battle of Calabria, only *Warspite* with its modernized 15in twin turrets had the ability to engage the Italian battle line. This is the view as *Warspite*'s 15in/42 Mk I guns engage *Giulio Cesare*. *Warspite*'s salvoes are tight, and they soon hit their target at 26,000yd, the longest hit ever recorded by a battleship.
Front cover, below: *Vittorio Veneto*, the lead ship in Italy's most modern class of battleships, never had an opportunity to engage a British battleship. The closest it came was at the battle of Cape Matapan in which *Vittorio Veneto* and three British battleships were present, but did not exchange fire. In this view, *Vittorio Veneto* is firing a broadside at a British light cruiser. The guns in all three 15in triple turrets are at high elevation to engage the target 25,000yd away. On this occasion, the Italian battleship fire was observed to be accurate, but due to the salvo-dispersion problem no hits were scored.
Title-page photograph: View looking aft from the bow of *Conte di Cavour*, taken after the ship's 1933–37 reconstruction. (NH 86139 courtesy of the Naval History and Heritage Command)

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